









#### UNDERSEAVARIA

THE OFFICIAL MAGAZINE OF THE U.S. SUBMARINE FORCE

# **COLUMBIA CLASS**

U.S. Navy's Next Generation SSBN

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SPECIAL INSERT—
Pacific and Atlantic Submarine Force Organization Map

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An artistic rendering of a Columbia-class ballistic missile submarine (SSN-826) conducting surface operations. Courtesy of General Dynamics-Electric Boat.

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#### FORCE COMMANDER'S CORNER

Vice Adm. Joseph E. Tofalo, USN Commander, Submarine Forces



Undersea Warriors,

Greetings from Norfolk! Times are changing fast. The first decade of the 21st century saw our Navy primarily focused on a land war against Middle Eastern regional threats. Our emphasis was on power projection ashore and fighting from relatively uncontested littorals. Since then we have clearly shifted our emphasis toward high-end combat in contested blue water against near-peer competitors. With the increased capability and capacity of our challengers both individually and collectively, the Submarine Force must likewise concentrate on its overall lethality including each submarine's high-end combat effectiveness.

Let me give you a few examples of what the Submarine Force is doing to meet these new challenges. We've reinvigorated submarine tactical development by establishing a new Undersea Warfighting Development Center in

Groton, Conn. The Center is leading new lines of effort; reorganizing and rekindling our Tactical Analysis Group; and significantly increasing the quantity and quality of tactical development exercises. Beyond new tactics, we're working to increase the amount of sub-on-sub experience our crews get.

We've better "tuned" our Fleet Response Training Plan to both support our emphasis on the high-end fight and, more basically, to ensure we are working on the right things at the right times in the pre-deployment ramp-up. We eliminated a low-payoff basic training period for crews coming off a deployment vice coming out of a ship-yard. We've eliminated duplication and focused the Tactical Readiness Evaluation on high-end warfighting and focused the pre-deployment evaluation on our challenging peacetime missions that the unit is about to go do. We've expanded the Pre-Overseas Movement period and right-sized the spacing of focused Intermediate and Advanced Training Periods.

Beyond that, we are looking at our foundational crew competencies in new ways. The Force Improvement and Operational Safety, or FIOS, program is the linchpin of this effort. This program was the source of our 2015 policy shifting all submarines to

a 24-hour sleep cycle to reduce crew fatigue and mishap risk. We implemented an Operational Safety Officer aboard each submarine in 2016. Last year, we established a new Operational Fundamentals Core Competency, with emphasis on Operational Planning, Communication and Dialogue, and Assessment and Improvement, and integrated human -factors science into our training and doctrine for the first time.

We're also improving missile, torpedo, and electronic warfare capability and capacity, servicing targets in all domains. Finally, as discussed in the last issue, we are working to achieve a family of unmanned vehicles to complement each submarine's reach and capability. These systems allow a CO to be in multiple places at once. The unmanned vehicles can do the "dull, dirty, and dangerous" missions to help meet our capacity requirements while the manned platform takes on the high-end capability missions that only a professionally crewed submarine can do.

So that's a quick summary of what the Submarine Force is doing to adapt to our new threat environment. But one thing certainly hasn't changed; your Submarine Force remains "on scene, unseen" all over the world today, providing unequaled access with influence because we have the finest Officers and Sailors in the world. It is only through the continuous self-improvement and leadership of each of us individually and collectively as a team that we will meet the challenges of the future.

Thank you for all you do – keep charging!

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# DIVISION DIRECTOR'S CORNER

Rear Adm. John W. Tammen, Jr., USN Director, Undersea Warfare Division

Undersea Warfare Team,

I recently relieved as the Director of Undersea Warfare (N97), and I am very impressed with the acceleration of capability development for the Undersea Domain over the past few years. As the new Director, my focus is to ensure the Undersea Domain is appropriately resourced to be ready and lethal today while pursuing capabilities to ensure our nation's success in any potential future conflict.

I would like to acknowledge our progress over the last year in the two primary warfighting missions: Strategic Deterrence and Theater Undersea Warfare (TUSW).

On the Strategic Deterrence front, DoD's number one priority is to ensure the most survivable leg of the nuclear deterrent triad is sustained and modernized to support the requirements of 10 operational SSBNs. We have performed remarkable

"The United States must retain overmatch—the combination of capabilities in sufficient scale to prevent enemy success and to ensure that America's sons and daughters will never be in a fair fight."

work to extend the 30-year service life of the *Ohio*-class submarine to 42 years, and we are committed to modernizing this platform with the sensors and systems similar to the newest fast attack submarines. We have no margin for delay in the delivery of the *Columbia*-class and there are scores of personnel working tirelessly to ensure the successful class transition while achieving all STRATCOM requirements. The *Columbia* detailed design contract has been awarded to Electric Boat; construction of the lead ship will start in FY21, and at-sea testing in FY27. The *Columbia*-class' first patrol is scheduled for FY31.

Shifting now to the TUSW—one of our priorities for undersea warfare is ensuring we have sufficient forces to meet our Combatant Commander needs, both in peace and war. The most recent Force Structure Assessment, published in early 2017, requires 66 submarines. We are committed to building at least two *Virginia*-class boats per year, even while construction starts on the *Columbia*. Today's global environment is evolving and the *Virginia* class is evolving with it. Block III introduced the Virginia payload tubes and Block V will introduce the Virginia Payload Module (VPM) and other capabilities. The first VPM boat will start construction in FY19 and will commission in 2024. This will be the first step in preserving our undersea strike capability, reconstituting SOF capability on *Virginia* class and providing the capacity to carry innovative payloads and unmanned systems. Another

. W. Tammen, Jr.

investment priority is accelerating delivery of unmanned systems to the Fleet. Capable UUVs, effectively employed by capable warfighters, will enhance platform performance and increase the Navy's area of reach and influence.

Our National Strategy is clear. "The United States must retain overmatch—the combination of capabilities in sufficient scale to prevent enemy success and to ensure that America's sons and daughters will never be in a fair fight." I don't want our submarines to ever be in a fair fight. My job is to expand our portfolio of lethal options so submarine crews can always kick down the door for the rest of the Joint Force. In a recent appearance in San Diego, the Commandant of the Marine Corps, General Neller, stated, "As a naval force, part of a maritime campaign, we need more attack submarines... we're going to have to fight to get to the fight." Our primary occupation is to be preeminent warfighters to maintain our dominance in the maritime domain. We own the seas!

# UNDERSEAWARFARE

The Official Magazine of the U.S. Submarine Force

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#### Charter

**UNDERSEA WARFARE** is the professional magazine of the undersea warfare community. Its purpose is to educate its readers on undersea warfare missions and programs, with a particular focus on U.S. submarines. This journal will also draw upon the Submarine Force's rich historical legacy to instill a sense of pride and professionalism among community members and to enhance reader awareness of the increasing relevance of undersea warfare for our nation's defense.

The opinions and assertions herein are the personal views of the authors and do not necessarily reflect the official views of the U.S. Government, the Department of Defense, or the Department of the Navy.

#### Contributions and Feedback Welcome

Send articles, photographs (min. 300 dpi electronic), and feedback to:

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CHINFO Merit Award Winner



Silver Inkwell Award Winner

#### LETTERS TO THE EDITOR

In keeping with *UNDERSEA WARFARE* Magazine's charter as the Official Magazine of the U.S. Submarine Force, we welcome letters to the editor, questions relating to articles that have appeared in previous issues, and insights and "lessons learned" from the fleet.

UNDERSEA WARFARE Magazine reserves the right to edit submissions for length, clarity, and accuracy. All submissions become the property of UNDERSEA WARFARE Magazine and may be published in all media.

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#### \* MEDAL OF HONOR MOMENT \*



The President of the United States in the name of The Congress presented the Medal of Honor to Torpedoman Second Class Henry Breault, USN for service as set forth in the following Citatation:

"For heroism and devotion to duty while serving on board the U.S. Submarine 0-5 at the time of the sinking of that vessel. On the morning of 28 October 1923, the 0-5 collided with the steamship Abangarez and sank in less than a minute. When the collision occurred, BREAULT was in the torpedo room. Upon reaching the hatch, he saw that the boat was rapidly sinking. Instead of jumping overboard to save his own life, he returned to the torpedo room to the rescue of a shipmate whom he knew was trapped in the boat, closing the torpedo-room hatch on himself. BREAULT and BROWN remained trapped in this compartment until rescued by the salvage party 31 hours later."

Henry Breault was born in Putnam, Conn., on October 14, 1900. He enlisted in the British Royal Navy at 16 years of age and, after serving under the White Ensign for four years, joined the U.S. Navy. On October 28, 1923 Torpedoman 2nd Class Breault was a member of the crew of USS 0-5 (SS-66) when that submarine was sunk in a collision. Though he could have escaped, Breault chose to assist a shipmate, and remained inside the sunken submarine until both were rescued more than a day later. For his "heroism and devotion to duty" on this occasion, Henry Breault was awarded the Medal of Honor. Following 20 years of U.S. Navy service, Henry Breault became ill with a heart condition. He died at the Naval Hospital at Newport, R. I., on December 4, 1941.



#### Speed

Sun Tzu said in "The Art of War," "Speed is the essence of war. Take advantage of the enemy's unpreparedness; travel by unexpected routes and strike him where he has taken no precautions." A submarine's ability to maneuver at high speeds is the key to repositioning within a theater of interest and for maintaining the initiative in peacetime or wartime engagements. Speed is vital.

Speed gives U.S. submarines the agility to respond to contingencies worldwide. For diesel submarines, the fastest transit posture would be on the surface—an operationally unsatisfactory approach. The best submerged transit speed for a diesel submarine is around 7 knots and depends to some degree on the weather and adversary surface surveillance, which can complicate snorkeling operations to recharge the battery. Today's *Virginia*-class submarines can operate at three to four times that speed, sustain that speed indefinitely, and is unaf-

fected by weather or adversary surface surveillance. For perspective, a 2,000-nautical mile (nm) transit from Guam to the South China Sea would take about 12 days for a diesel submarine at 7 knots and about three days for a nuclear submarine operating at 25 knots.

Speed is also essential when intercepting targets, running down an evader, or escaping from a pursuing adversary. Unclassified estimates of high-end Russian or Chinese nuclear submarines and warships suggest they can operate at speeds in excess of 30 knots. By comparison, a Japanese *Soryuclass* submarine has a maximum speed of 20 knots submerged but can only maintain this speed for a brief sprint, after which it would have to disengage.

#### **Endurance**

Submarine endurance is the ability to transit far from home and then operate unsupported in a mission posture for an extended period. For diesel submarines, endurance "on station" is limited by the fuel capacity that remains after the transit, the duration of the operation, and the transit distance required to reach a place to refuel. Endurance in a stealthy "mission posture" is limited by the need to find an opportunity to securely snorkel to recharge batteries. In addition, diesel submarines need to manage a safety margin of reserve battery capacity or fuel



to accommodate unexpected circumstances. Nuclear-powered submarines do not have these operational limitations; long transits are quick, there is no need to create snorkel windows, there is no need for fuel or battery safety margin management, and there is no need to budget fuel for the return transit.

#### **Weapon Volume and Diversity**

Because submarines operate alone far forward without logistical support, it is vital that they carry enough ordnance to make the risk involved in getting in and out worth the impact the submarine makes on station. Modern diesel submarines carry from 8 to 24 weapons, almost all of which are launched from the torpedo tubes. Nuclear-powered fast attack submarines, in contrast, carry 36 weapons that are a combination of 12 vertical and 24 horizontal weapons. *Virgnia*-class submarines equipped with the Virginia Payload Module will be able to carry an additional 28 Tomahawk-sized

"A submarine's ability to maneuver at high speeds is the key to repositioning within a theater of interest and for maintaining the initiative in peacetime or wartime engagements. Speed is vital."

payloads for a total ordnance load of 64 torpedoes/missiles. On *Los-Angeles*-class submarines and the *Virginia*-class Block I and II submarines, the vertical payload volume is 12 21" tubes. Only on the Block III *Virginias* and beyond submarines does an 87-inch payload volume exist. Therefore, a nuclear submarine can carry a payload that is about three times as large as a diesel submarine payload, depending on the diesel submarine in the comparison, and can carry

a much more flexible range of payloads able

to support a wider range of missions.

missiles or an equivalent volume of other

# Sensor Capacity—Space, Weight, Power, and Cooling

In addition to weapons, submarine payloads include sensor systems such as sound navigation and ranging (SONAR), periscopes, and electromagnetic warfare systems. Each of these systems imposes a structural footprint—the SONAR array, the mast arrangement, the processing and display equipment—that involves space and weight, including shock mounting, maintenance access, and repair parts storage. In addition, each of these systems places a demand on electrical power and cooling systems. Diesel

submarines are smaller and therefore necessarily must constrain the size of the sensors and support systems they can carry. Large acoustic arrays, for example, are problematic.

The design and operation of a diesel submarine necessitates the limiting or rationing of power and cooling demands, which often means shutting down systems or system components. Nuclear submarines are much less constrained on structure, power, and cooling. They are able to carry large arrays, large processing banks, long towed arrays, robust display consoles, and the necessary parts and logistic support. Nuclear submarine crews do not have to decide whether they want all of the systems operating or just some of the systems to conserve resources for a prolonged mission posture until the next snorkel opportunity. In summary, nuclear submarines have larger and more capable sensors, more flexibility on sensor options, and are able to fully employ those sensors without compromise.

#### **Stealth and Vulnerability**

A well-designed diesel submarine that is professionally operated, submerged and running on the battery, and lying in ambush is perhaps the stealthiest and most capable maritime threat today. This particular posture plays directly to the strengths of a diesel submarine. U.S. Navy submarines have other missions to carry out that are not so well suited to diesel submarines as is the above scenario. And even in this ideal ambush mission, there are other phases of the operation that must be performed, and in those phases the weaknesses in stealth and vulnerability of diesel submarines come into play. The submarine must transit to its ambush location, it must periodically recharge while lying in wait, and it must return home. In general, these are not strengths of a diesel submarine.

That said, there are countries whose only submarine mission is local defense. For such countries, there would be no transit and the mission location would be in home waters. This also means that there would be

no surface or air threats to the diesel submarine while recharging. These countries should buy diesel submarines because they are a perfect match for their mission and circumstances. The United States is not in this situation. We will not have submarines lying in ambush in our local waters waiting for a threat to arrive. We have global responsibilities and a broad range of missions. We have to transit long distances quickly, and we need the best stealth that can be achieved to support this mission set.

When a submarine is operating far forward, the crew must carefully manage the risk of detection. All submarines are designed to limit their acoustic signature and can further limit their visual and radar vulnerabilities by not operating at periscope depth or, when they are at periscope depth, by minimizing the signature produced through good operational discipline. The signature produced by a diesel submarine snorkeling is much greater than the signature of a prudently exposed periscope.

Even with Air-Independent Propulsion systems, which also depend on consumables with limited onboard supply, nonnuclear submarines remain more operationally constrained in speed and flexibility. For nuclear submarines, the ability to produce essentially unlimited electricity and propulsion while submerged enables limiting mast exposure to the bare minimum needed for sensor effectiveness. When a nuclear submarine accepts detectability risk to gain information or conduct an operation—for example, exposing a periscope or launching a missile—it is a deliberate choice made as a calculated risk in pursuit of an operational gain. It is not a step imposed on the crew due to a limitation in the platform's performance, as is the case with a diesel submarine forced to snorkel.

#### **Comparitive Analysis at a Glance Diesel Submarine Nuclear Submarine** Speed Surface: 17 knots Surface: >15 knots Submerged: >25 knots (max) Submerged: ~20 knots (max) Transit: 7 knots Transit: >25 **Edurance** Limited by fuel capacity Unlimited Weapons **Torpedoes** Cruise missiles Cruise missiles Ballistic missiles Torpedoes SEAL Delivery Vehicle Sensors Limited due to space Full array Limited Unlimited **Power** Cooling Limited No limitations Stealth Limited by battery No limitations Sustainability No infrastructure for support Self-sustaining & existing global infrastructure Cost >\$600M ~\$2.7B

#### **Sustainability**

Sustainability refers to how effectively the Navy's support infrastructure is able to provide for the needs of the submarine. This includes food, repair parts, repair equipment and training, crew training, and the availability of fuel and other consumables. As a forward-deployed Navy, our surface and air forces have mature supply lines and a developed expeditionary sustainment capability. Some of our sustainment capability comes from allied and partner-nation support. In a

contested environment, this regional support may be unavailable due to political sensitivities or physical destruction of infrastructure.

To compensate for this possibility and to add operational flexibility, Military Sealift Command has a fleet of ships that provide underway replenishment. There is no sustainment infrastructure for diesel submarines in the U.S. Navy; a large percentage of the equipment on diesels would be specialized and unique, and so too would be the support. This entire infrastructure would have to be built up from scratch, requiring investment in a separate independent support network compared to nuclear submarines. Nuclear-powered submarines are largely self-sustaining while forward deployed and, for the work that must be done while forward, the infrastructure already exists and is finely tuned.

#### Cost

The most common argument in favor of diesel submarines is that they cost less to build than nuclear submarines. For perspective, a German Type 212 diesel submarine sold to Norway for delivery in 2019 cost 560 million Euros (~US\$623M) while today's Block III *Virginia*-class submarines cost ~US\$2.7B. Based on these numbers, proponents for diesel submarines argue that the United States could get four diesel submarines for the cost of one *Virginia*-class submarine. However, this is not an applesto-apples comparison because the four Type 212 submarines cannot do all the things that the one *Virginia*-class submarine can do.

A closer but still imperfect comparison would be to analyze Australia's most recent contract with French shipbuilder DCNS for 12 Shortfin Barracuda Block 1A submarines (to be modified from nuclear to diesel). This contract was \$50B Australian dollars (~US\$38B) for 12 submarines, which averages to about US\$3B per submarine including engineering costs for modification, materials, and infrastructure to build the submarines in Australia. This includes costs for Lockheed Martin's Submarine Warfare Federated Tactical Systems (SWFTS) advanced fire control and SONAR system, which is used by both the United States and Australia.

When thinking about cost, it is prudent to remember that we are not purchasing submarines—we are purchasing a

set of operational capabilities. Imagine a swim-off between the four Type 212 submarines and a Virginia-class submarine in Hawaii. Assume a contingency develops in the Western Pacific that requires a flexible response and a 4,000-nm transit. The Virginia-class submarine would be there in six days, the diesel submarines in more than three weeks. The diesel submarines would be vulnerable to tracking and interdiction in transit due to frequent exposure. When they finally arrive on station, their remaining endurance would be a small fraction of that of the Virginia-class submarine. The four Type 212s would bring twice as many torpedoes as the Virginia-class submarine but would have very little mobility to run down adversaries to administer a torpedo attack.

They would bring no strike weapons. They would have a limited sensor suite. They would not be able to transit in the company of a carrier strike group due to speed constraints. They would not be able to do high speed acoustic searches to clear an area. Any repositioning of the diesels would depend on the plan for refueling them—a risky operation when operating far forward.

All this is not to criticize diesel submarines outright, it is to criticize them as a poor match for the operational environment and requirements facing the U.S. Navy. Type 212 submarines would be excellent for local operations in European littoral waters as part of the German or Norwegian navy. They would be ineffective, however, in supporting the missions of the U.S. Submarine Force due to their slow speed, limited endurance, limited payload size and mix, and their stealth vulnerabilities. It should be clear to see why diesel submarines do not meet the U.S. Navy's operational requirements.

#### **Industrial Base**

Another aspect to consider is how the Navy would build diesel submarines. The cost of a single diesel submarine is most appealing when it is available for purchase off an already operating production line, but the United States has not produced a diesel-powered submarine since 1959. Today, U.S. nuclear shipbuilders are designing and producing *Virginia*-class Blocks III, IV, and V submarines and designing the *Columbia*-class SSBN, and there is not sufficient indus-

trial capacity to take on additional projects without detracting from the Navy's current shipbuilding plan. In fact, the Navy would like to accelerate production of fast attack submarines beyond two *Virginia*-class submarines per year to more quickly reach a total of 66 fast attack submarines but current industrial capacity limitations prevent immediate acceleration. A new design and build effort would detract from existing efforts and would require significant capital investment in the public and private shipyards to produce, design, and maintain diesel submarines and their equipment.

#### **Real-World Training**

One other argument for the U.S. Navy to have diesel submarines is to be able to train with them. Some argue that the procurement of diesel submarines would enable more realistic training for the U.S. Submarine Force. The U.S. Navy acknowledges the benefit of training with diesel submarines at sea. To accomplish this, the Navy has existing avenues through bilateral and multilateral training exercises with our allies and through the Diesel-Electric Submarine Initiative, which holds Fleet pre-deployment exercises and bilateral tactical development events. While this training is effective, it does not require purchasing diesel submarines.

The U.S. Navy not only has no compelling reason to abandon its nuclear-only Submarine Force policy, it has every incentive to stay the course. In a world beset by powerful competitors, rogue nations, and violent non-state actors, there is no question that the United States has an obligation to ensure the safety and freedom of Americans as well as other less powerful partner states and allies. Our national requirement to operate far forward and quickly respond to crises worldwide requires the speed, stealth, and endurance inherent in our current and future fast attack and ballistic missile submarines.

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David Goggins' career began as a Submariner aboard USS Tecumseh (SSBN 628) where he served as the Electrical Assistant, Reactor Controls Assistant, Sonar Officer, and Assistant Operations Officer. He was then selected into the Engineering Duty Officer Community and reported to the Supervisor of Shipbuilding, Conversion and Repair (SUPSHIP) in Groton, Conn. At this command, he was the Lead Ship Coordinator for PCU Connecticut (SSN 22) from initial hull construction to the initial stages of post-shakedown availability planning.

Subsequent shore duty tours included serving as the Assistant Repair Officer at Naval Submarine Support Facility in New London, Conn.; SeaWolf Class Project Officer and Program Manager's Representative at SUPSHIP Groton; SSGN Conversion Project Officer and Program Manager's Representative at SUPSHIP Groton; Virginia Class Submarine Assistant Program Manager (APM) for Post Delivery and APM for New Construction; and a staff assignment within the Office of Chief of Naval Operations, Undersea Warfare Division (N97).

#### How long have you been the Columbia Program Manager?

I took the job in June of 2015.

Prior to *Columbia*, I served as the *Virginia* Class Submarine Program Manager.

#### How does Columbia compare or differ with Ohio?

*Columbia* and *Ohio* are approximately the same size (approximately 560' long and 43' diameter compared to approximately 560' and 42' diameter) although there are eight fewer missile tubes on *Columbia*.

Rather than develop a new missile system, Navy assessments determined it to be more cost-effective to extend the life of the current Trident D5 missile and use the existing Strategic Weapon System design. A key benefit of life extension is that the Navy can avoid the cost and schedule risk of developing an upgraded or new weapon system at the same time it is building a new class of submarine.

*Columbia* will also share systems and components from *Virginia* class such as the ship control system, sonar, torpedo fire control, radio, universal modular masts, sanitary system, pumps, and valves. This commonality will result in significantly reduced logistics costs in addition to the savings incurred from leveraging existing technology.

The *Columbia* design incorporates a life-of-ship reactor that will not require the mid-life refueling performed on *Ohio*-class submarines, enabling the planned force of 12 *Columbia* SSBNs to provide the same at-sea presence as the current force of 14 *Ohio* SSBNs.

*Columbia* also integrates an electric drive propulsion train along with other mission-essential technologies to ensure the platform remains survivable through the 2080s.

#### What is your assessment of the Columbia-class program status?

Columbia is on track to commence long lead time material procurement for the lead ship next year, commence construction in FY21, and to deliver the first Columbia-class submarine to the Fleet in FY28 with initial deployments in FY31. To ensure we are on track, we have established a key program metric to achieve 83% design completion at construction start, and today we are right on our goal. The push for a high design maturity (>80% complete) as of construction start comes from lessons learned during the construction of previous classes



Rear Adm. David Goggins (right)
the Columbia Program Director, with
Capt. Tom Smith (left) of the UK MOD
Dreadnought Programme, during
a tour of Electric Boat facilities at
Quonset Point, RI.

# Rear Adm. Goggins

of submarines to minimize design changes that result in increased costs and prolonged delivery schedules. Maintaining 83% design completion and the Integrated Enterprise Plan (IEP) are two of many factors positioning the *Columbia*-class submarine program to providing needed capability at an affordable price on the timeline needed to meet national strategic deterrence requirements.

#### What is the Integrated Enterprise Plan?

We are challenging our industrial partners to determine the optimal build plan for the *Columbia*-class across three facilities—Quonset Point, Groton, and Newport News—while not interrupting the current build plan to the *Virginia* and *Ford* programs. The IEP is a comprehensive, government-informed industry initiative evaluating shipbuilder capability and capacities to ensure readiness to construct and deliver the *Columbia*-class in concert with the other ships. The IEP provides the overall framework of the required facility investments, manning, hiring requirements, and trade school demands, as well as the strategy to prepare the vendor base for the significant increase in workload.



Early missile tube quad pack during proof of concept testing at Electric Boat.



Columbia and Dreadnought Construction teams during a tour of Electric Boat Facilities at Quonset Point.

#### What milestones have been achieved to date?

The *Columbia* Program completed the Defense Acquisition Board (DAB) review for Milestone B approval on November 4, 2016. An Acquisition Decision Memorandum (ADM) granted Milestone B approval on January 4, 2017. Milestone B is the Milestone Decision Authority (MDA) to enter into the Engineering & Manufacturing Development (EMD) phase of acquisition. In its simplest form, it is the transition from preliminary design to detailed design efforts. During the EMD phase, *Columbia* will complete all needed hardware and software detailed design, component development, and engineering integration efforts in addition to conducting developmental testing and evaluation to prepare for production.

On September 21, 2017, the Navy awarded the Detail Design and Construction Readiness contract to General Dynamics - Electric Boat (GDEB).

## What does the Detail Design and Construction Readiness contract include?

The scope of the Detail Design and Construction Readiness contract includes completion of detail design, Missile Tube Module



Rear Adm. David Goggins (right) during a tour of EB facilities at Quonset

(MTM) prototyping, component and technology development, cost reduction efforts, and United Kingdom (UK)-unique design and manufacturing efforts for the Dreadnought-class SSBN Common Missile Compartment.

#### What is the next major milestone?

Our next milestone will be in 2020 with the Lead Ship Authorization DAB. At this DAB, we will gain authorization from the MDA to commence construction on Columbia.

Prior to our Lead Ship Authorization decision point in 2020, the program will verify the maturity of its design through the Critical Design Review and its readiness to commence construction through the conduct of a Production Readiness Review.

#### What, if anything, is already being built?

We have begun construction of the lead ship MTM first article prototype. The MTM is composed of four quad packs, with each quad pack consisting of four missile tubes and their associated hardware support equipment.

This prototype has validated our vendor base for missile tube construction and our Integrated Tube & Hull robotic construction process. Our first quad pack efforts also support the UK Dreadnought Program, which will leverage our construction processes for their missile compartment.

#### **Why 12 Columbias?**

SSBN force structure is dependent on the number of submarines required to be maintained operationally ready, not the number of warheads or missiles carried by the SSBNs. The submarines must be continuously postured across large areas in two oceans. The Force is sized to keep the required number of SSBNs properly positioned, postured, and survivable at all times. A minimum of 10 operational SSBNs are required to continuously meet this requirement. A force of 12 total Columbia SSBNs ensures that at least 10 operational SSBNs are always available. even when some are offline conducting mid-life overhauls. This is the smallest number of SSBNs that will still meet presidential quidance and satisfy U.S. nuclear employment plans. Any further reductions in warheads or missiles do not result in a reduction in the number of required Columbia SSBNs.

In addition to validating our construction techniques, early production of the MTM will provide the program much needed schedule margin to ensure we deliver Columbia on time.

#### What challenges lay ahead?

The biggest challenges are vendor base readiness and program affordability. For Columbia, we established a Design for Affordability program early in the acquisition process as well as the IEP discussed earlier. We have challenged each member of the team, both government and contractor, to seek opportunities to drive cost savings while maintaining requirements. This has certainly reaped its benefits as specifically cited in the Milestone B Acquisition Decision Memorandum as the total reduction from the original procurement cost estimate has been nearly 40%, approximately \$50B in 2017. We aggressively pursue cost reduction opportunities, which allows for a more affordable fleet.

Another significant challenge is executability. We must execute the design products and construction process on time. Just as with cost, we are challenging our team to drive margin into the schedule because in our business, if you are on schedule, you are behind. Our team is answering that challenge by driving opportunities to create schedule margin in component development and advance construction opportunities. We are also conducting deep dives into the construction process, ensuring we can execute from a work force, facilities, and assembly standpoint.

We will deliver an on-time and affordable platform.

#### Where will the Columbia-class submarine be built?

GDEB in Groton is the prime contractor and is responsible for the design, construction, and delivery of the 12 Columbia-class submarines. Huntington-Ingalls Industries (HII)-Newport News Shipbuilding (NNS) in Newport News, Va. will participate in the design and construction of major assemblies and modules, leveraging their experience on Virginia-class submarines. The estimated construction split is 78:22 between GDEB and HII-NNS.

Both shipbuilders will continue to deliver Virginia-class submarines with some future shift in deliveries toward HII-NNS in recognition of Columbia Program priority.

#### When do the first crewmembers of the Columbia report?

The first crewmembers of Columbia will report in June of 2024. The crewmembers report in six increments aligned to key construction events and crew certification for the Blue and Gold crews. All crewmembers will arrive by January 2027 for a complement of 155 personnel per crew. Initial crew certification will occur in May 2027 to support sea trials.

#### What about Columbia excites you the most?

I am truly most excited to be part of the team that transitions the design from paper to steel. As we begin the new phase of acquisition for the program, it is time to prepare for construction start in FY21. To make sure we deliver on time, our focus for the next three years is construction readiness regarding our design products, facilities, resources, material, and integrated schedules.



U.S. naval uniforms are a visual display of the proud heritage of our maritime fighting forces. One of the most important uniform initiatives for Submariners is the reintroduction of the "submarine sweater" as an official uniform item. U.S. submarine Sailors have worn the sweater in various forms since World War I and typically

loads, which includes cooling and heating systems. While the wool Navy peacoat provided warmth, it was too restrictive to wear below decks on a submarine. The proposed uniform change is in response to overwhelming Submarine Force feedback regarding the desire to have a uniquely identifiable, historically-based, standard submarine uniform item. The submarine sweater represents the rich history of the Submarine Force, is well coordinated with the Service Khaki and Enlisted

Recently, NAVADMIN 310/17 announced a number of updates to Navy uniform policy and included several Navy uniform initiatives. For now, the submarine sweater is authorized for wear by personnel currently serving at Submarine Force commands or personnel serving at non-Submarine Force commands who are qualified in submarines. Ashore the submarine sweater may be worn with Service Khaki (E7 and above) and the Enlisted Service Uniform (E6 and below). A standard hook and loop back, 2 inch x 4 inch, black leather name tag will be attached and placed in the same position as the ribbon bar and warfare device. New submarine sweaters are not available for purchase from the Navy Exchange yet. Individuals with submarine sweaters in good condition (free of snags and holes) may attach a name tag and wear them

# **TEACHING SUBMARINE LEADERSHIP:**

# A Commanding Officer's Responsibility

You say the words,
"I relieve you" and
report your relief
to the Commodore,
"Commodore, I have
properly relieved as
Commanding Officer."
So now what?

ost likely for the year prior to your command you were thinking about what you would want to do in command; were you also thinking about your command tour for the prior 15 years? If not, then maybe you were focused on your next tour as executive officer (XO) or department head. Although it is logical to focus on the upcoming milestone, this short-term focus may not result in the type of deep self-reflection the Navy requires in its commanding officers (COs). Leadership styles are definitely different for different billets, but if we are to develop the best COs, command leadership should be started as a junior officer and should be a priority during your command.

Today is the day to properly prioritize leadership training in your wardroom. While COs tend to focus on all the necessary day-to-day requirements, we, may fall short in long-term personnel development while in command. Following your tour in command, however, you will relish the successes of your people and quickly forget the small casualties of your command's day-to-day submarine life. If you had 15 years of formal preparation for command, how well thought out would your first day in command be?

This article should serve as a reminder that training your relief as a CO starts with

formal leadership training of the entire wardroom. If you have not started leadership training with your team, start today by asking them to read this. Then review it with them and listen to their feedback. There doesn't need to be a Navy program or requirement; this is an implied duty for any captain, and as each CO is different, your style of leadership training will be different, but no less effective. Formal leadership training coming from the captain is the most influential way you can make a positive impact on your wardroom, ship and Navy.



#### Responsibilities of command

So, what do you actually do as CO? There are abundant examples and rich tradition depicting your role. There are naval regulations that precisely define your responsibilities, but you set the priorities and the pace for executing those responsibilities. How you outline, communicate, and execute your priorities is important.

You are the role model for your crew, and especially for your wardroom. Your actions will define what acceptable leadership looks like. No single person will have a larger impact on your team's leadership future than you, and, if done properly, your example alone will have a positive effect on your team.

Leadership, however, takes constant effort, discipline, learning, and practice. If you believe you are a leader because you are in charge of people, are you then a pianist for owning a piano? How did you learn to lead? What did the Navy invest in you that gave the Navy confidence and trust in your ability to command? If you can't answer this, or if you can only point to the formal schools that the Navy provided or on-the-job training, then you may not have been provided with the best possible tools.

While it is incumbent on you to continue your self-education as CO, there is really no time to grow into the job. Every day you did not spend preparing for the leadership challenges ahead is a day of lost preparation, from which your current team cannot benefit. Start today by thinking of your team as prospective COs and treating them that way. Discuss with them the challenges of command and provide them with the tools you have acquired over your years in the Navy.

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#### The limit of time

Why don't COs make formal leadership training a higher priority? There are a lot of tasks competing for our time onboard a submarine. We have important engineering, operational, and maintenance tasks but, if you make leadership training an equally high priority, you will see improvement across those areas. Your team will increase its efficiency, improve proper delegation, and free up more time to allocate to other tasks. We perceive time as the primary restricting factor when it comes to giving leadership training a low priority, but time may be the best reason to give it a higher priority.

Since time is a zero-sum game, what's the benefit of taking the time to do this? By teaching leadership, you are preventing problems in the future that will take your time when it is least convenient. You will eventually have a negative counseling session with someone on your team, and you are committing now to spend that time in a productive manner, vice a reactive one later.

Through formal leadership training, you are communicating your vision of the culture you want in your team. By vocalizing and reviewing actual decisions you have made on the boat, you open yourself up for feedback from your team as well as providing an opportunity to convey your decision-making calculus to your team. This will flatten your organization, making it more efficient. If training is executed properly, your team will be clear about your intentions, and you and your crew will be using a common leadership lexicon, making communications and counseling easier. By investing time now in preparing your wardroom for command, you will gain larger, future returns on your time than you originally invested. Start now, though. Make that down payment on the future.

#### **Prioritizing leadership training**

Your priorities are laid out daily by the plan of the day. If you have scheduled your day with maintenance meetings, then clearly

Here are the rationalizations, mostly subconscious, that we use to give formal leadership training a low priority.

- "I want to be seen as a natural born leader. Leadership is an innate ability that cannot be taught." Leadership is a taught skill, and it requires practice, feedback, and self-evaluation to improve. No great athletes or musicians, despite whatever natural talents they may have, improved their performance without a coach or teacher. Who is better suited to coach your team in leadership than you?
- "I don't want to be seen as prescriptive. If I tell my team I consciously stop typing when they are talking to me, they will think I am cookie cutter instead of genuine." Perhaps, but isn't the benefit of having incredible leaders in the future outweighed by this risk of perception? Doesn't it say something to your team that you make the effort to consciously think about your own leadership and work hard to improve it?
- "I don't want to be held accountable for the leadership traits that we discuss because I might involuntary or voluntarily violate them at some future time." Are you not already held accountable? The fear of being judged can sometimes be palpable. This is natural, but it is also natural to realize that, being in a position of authority, you are judged every moment. Now is the time to understand this and get past it. You will be judged poorly, in time, if you do not take the opportunity to develop your team.
- "My team doesn't want something else added to their plate. There is enough to spend our time on and, by me adding this topic to it, they will either not do the preparation or resent the fact." Once you engage your team members at this level, they will recognize the investment the organization is placing in them and may actually complain when you have to skip leadership training due to a higher, emergent priority. Do not underestimate the power of your investment in your team.



maintenance is your priority. If you are scheduled to be at the trainer all day, that is your priority. Your presence is the single most non-verbal indicator of your priorities, and your schedule shows where you are. By having a formal leadership training schedule, you will be demonstrating that this is a priority for you.

Teaching leadership has the additional benefit of requiring you to continue to grow and improve. Because of numerous competing priorities, it is easy to push self development aside. If you do not continue to work to improve your own leadership, you will become stale, similar to resting on the fact that you have a great one-mile running time. If you do not continue to train, you will soon find that your ability to run that mile has atrophied. By scheduling required leadership training, you are holding yourself accountable to your team to allocate the time in pursuit of leadership improvement. This requires discipline. By voicing your priority to conduct leadership training, you are spreading this discipline burden across your team.

#### Execution

Now that you prioritized leadership training, how is it executed? How often should you be training? Let's assume you are conducting formal leadership training with your wardroom quarterly, chief's quarters semi-annually, and crew annually. This can also include sub-groups: department heads and XO quarterly and the chief of the boat with the chief's quarters quarterly. Chiefs and division officers can work with their teams on a regular basis. You can use existing structures such as CPO365 or a

standard time slot on a given day while underway.

Leadership topics should include ethics. There are numerous ethics case studies from the Navy Leadership and Ethics Course, the Naval Academy, and the various military professional universities. While these case studies are great in the classroom, there is nothing more powerful than using these with your team and making them relevant to the leadership decisions they are currently making. In addition to using case studies, ask your team members to write down three leadership traits they valued prior to joining the Navy, a powerful example of a leader they admire, three worst leadership traits, or a time they were inadequately prepared for a leadership challenge and what, if anything, makes them ready now to handle such a challenge.

#### Conclusion

All professions require study and effort for improvement and not just on-the-job training and experience. The leadership style you used and were comfortable with as an engineer may not serve you well as a CO. As your responsibilities grow, your ability to communicate and delegate must also grow. Each leadership opportunity presents unique challenges that will require different leadership tools just as different maintenance jobs require different tools, even though the same person is



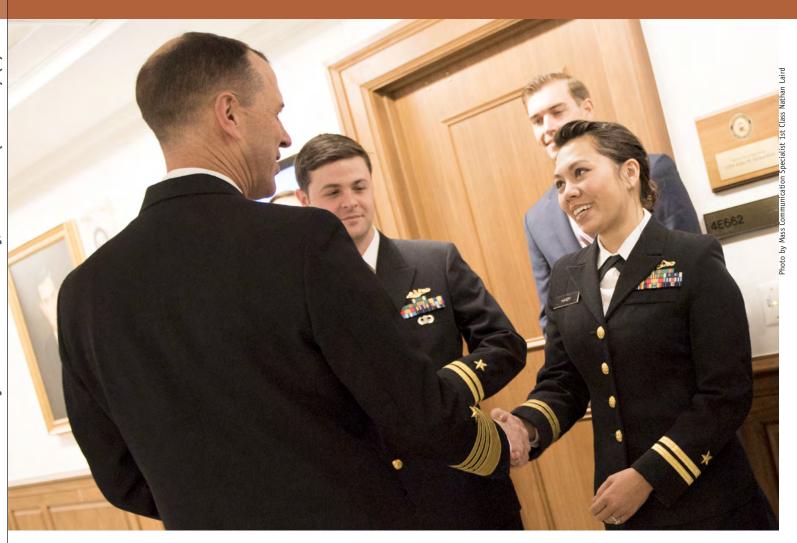
Below are 10 submarine-centric topics you may want to discuss with your team to get started.

- How do leaders purposely change themselves to meet their perception of what is expected of them? For example, would you decide to not drink alcohol because you believe that is the best role-model? Would you drink alcohol to fit-in, even though you wouldn't normally? How should alcohol be treated in our organization? How do we treat people who come in to work intoxicated?
- How do you invite contrariness into a team? Is it always warranted? When wouldn't you want a different opinion? Who should be able to say "no" in your team?
- How much sleep should we get to perform our jobs? Do we do a good job of protecting sleep? How should decisions be made while underway when someone is asleep?
- Is leave a right or a privilege? If we support an aggressive leave plan, does that hurt or help the organization? How? Should leave be taken during an underway?
- How do you perform formal, negative counseling? What are the tools of discipline? How do we reward excellent work? What are the levers each chief or officer has in discipline and reward? How do you perform mid-term counseling? Why is it important?
- What part of your team does physical fitness play? Should there be command PT? What are the command's responsibilities toward its team regarding physical fitness? How do you set the example and what is the balance required?
- What are your responsibilities as a leader off the boat? What is expected of you from your team?
- How do you use social media with crew members? Do you have a private facebook account? Do you tweet? Should you? Should you have a "friend" who is on the boat? How do you handle a negative comment on the ship's facebook page? How do you handle an inappropriate comment?
- How does your leadership need to change from department head to XO? How did you prepare for your next challenge?
- Can you be vocal about your political thoughts? What can you post on social media? What should you post on social media? What are your duties in your online life?

accomplishing the task. You, as CO, need to address the different leadership demands and tools with your team members now so they are better prepared for the challenges they are to face.

I hope that reading this article has energized you to make regular leadership training an appropriately high priority on your boat and discuss your teaching methods with others on the waterfront. If we believe our greatest asset is our people, and if we

define what "taking care of our people" really means, then we will quickly come to the conclusion that, by investing the time to formally teach leadership to our teams, we are investing in our own futures as well as theirs. By talking about it and socializing new ideas, we become better as a force. Don't rationalize away your most important tool—your direct involvement. Make the time investment today and formally train your teams on leadership.



# JOOY Week Through One Junior Officer's

In photo above, Chief of Naval Operations (CNO) Adm. John Richardson meets with Lt. Hardy and the Submarine Force Junior Officers of the Year at the Pentagon.

never thought that, nearly five years after graduating from the United States Naval Academy, anything could make me feel like a Midshipman again. It turns out that rank and experience have very little to do with thwarting that feeling. When you are standing in a group of lieutenants, dazed and lost in the halls of the Pentagon wearing Service Dress Blues, a youthful foolishness quickly returns. Yet there we stood, amidst side glances and confusion, the Submarine Force Junior Officers of the Year (JOOY) for 2017.

The Junior Officer of the Year (JOOY) program is an incredibly rewarding recognition of junior officers in the Submarine Force who have demonstrated superior skills in leadership and management, operational planning, technical prowess, and overall seamanship. Each boat in the fleet nominates a junior officer for this award, and each squadron is tasked with picking one from among all of the boats in the squadron. Submarine tender candidates are also submitted and chosen by the ships' commanding officers.

The tremendous distinction that accompanies this award is one that catches most of its winners by surprise. Submarine wardrooms are brimming with motivated, intelligent junior officers, but there was a distinct sense of humility that could be seen in all of the JOOY winners present. When congratulated, it was not uncommon to hear "I don't know what I did differently. I was just doing my job."

The visit to Washington D.C. provides JOOYs the opportunity to meet with senior officials to discuss current fleet challenges and possible solutions. Our trip began with us quietly introducing spouses and reuniting with friends we'd not seen since our nuclear training pipeline. Many of us were simply glad for the break from our respective boats.

#### **Meetings with Navy Leaders**

The first afternoon consisted of watching our group of naval officers frantically attempting to gather on the same subway car en route to the Pentagon. Later, these same officers were clumsily making their way through Pentagon security to gather in the tour waiting area (in stark contrast to the practiced efficiency of seasoned Pentagon visitors). The tour of the Pentagon, awash in epaulettes, ribbons, medals, and myriad uniforms, only whetted our appetites. Here, I offer advice to the ladies who attend this trip in the future: if you wear heels, make sure they are *short heels*.

We came at last to the kickoff of our weeklong trip: a meeting with Vice Adm. James Foggo, Director, Navy Staff. Surrounded by the highly decorated walls of Adm. Foggo's Pentagon office, we began to more fully appreciate the unique opportunities that were presented by this trip. The afternoon meetings with Adm. Foggo and Cmdr. Deichler (N133) allowed us a

rare insight into the high-level decisions that eventually affect the lives of submarine crews. Cmdr. Deichler, who addressed the first-ever Junior Officer Symposium earlier in the year, informed us of the immediate changes it yielded and the long-term changes being considered. The reassurance that our recommendations and concerns were being actively addressed gave all of us a sense of ownership of our futures. Overall, that first afternoon offered us a unique perspective into the background of the plans, missions, and decisions that we had been executing daily with our crews. I hope our meeting also gave these leaders some added perspective into the implications of their daily decisions as well.

The following morning, we met with Rear Adm. William Merz, Director of Undersea Warfare Division (N97). The open discussion we had about our concerns affecting our skills and warfighting abilities was refreshing and enlightening. It was the first opportunity for us to share our unique experiences aboard our respective submarines, and I realized that I had never considered the many different styles of leadership, mission sets, and exercises that exist outside the sphere of my own squadron. The outcome of this discussion was surprising in an important way—it brought a new excitement to what we did, opening channels of discussion that we were all equally capable of contributing to and offering a certain significance to the roles we played individually.

Among the host of influential individuals we were invited to speak with were Adm. James Caldwell, Director, Naval Nuclear Propulsion Program and Adm. John Richardson, Chief of Naval Operations. These two prestigious gentlemen as well as Adm. Caldwell's lovely wife, Kim, shared with us personal stories about their own failures and successes, philosophical insights on leadership, and the road ahead for the Submarine Force that we were paving. That future, as later events would emphasize, includes the Columbiaclass submarine, the size of our force in the years to come, and the evolving threats we were only beginning to see in the world.

Mrs. Caldwell directly addressed our significant others, recognizing their particular challenges, and offered invaluable advice from her many years of experience. The recognition of our significant others was important. I certainly could not have made it through the past years without the support of my fiancé. They are not always in the spotlight, but they should be. The emotional stress they must overcome, the lives they continue to support at home while we are away, and the long hours and temperaments they must endure are the sacrifices we ask them to pay. They are the driving force behind the entire submarine community. Lt. Hans Nowak II, Squadron 20, said it best when he said of his civilian wife, Nicole Nowak: "The sacrifice Nicole has made overshadows anything I have done."



Rep. Joe Courtney meets with the Submarine Force Junior Officers of the Year.



Vice President Pence meets with the Submarine Force Junior Officers of the Year at the White House.

#### **Cutting-edge Navy contractor work**

Near the end of our week, we took a step into the civilian aspects that influence our force. A long and rainy drive found us at the unassuming facility housing the famous Lockheed Martin "Area 51" in Manassas, Va. Meeting the people who develop the technology we use to execute missions and keep our nation safe was an incredible experience. We were even given sneak-peeks of future projects and current developments (which were, to be frank, very cool). Lt. Joe Buonaccorso, Squadron 1, commented, "Through this visit we gained a firsthand appreciation for our country's defense contractors, who are tirelessly working to ensure our Navy maintains its tactical superiority for years to come."

Here, we saw the physical evidence behind an emerging submarine doctrine: a call for a return to warfighting-its principles, its creativity, and its technological innovation. This theme would carry on to the Capitol, where we had the incredible opportunity to meet Representative Joe Courtney of Connecticut's 2nd Congressional District. "Two Sub Joe," as he is known, was the driving force behind Electric Boat's increased Virginia-class submarine annual output.

If we had ended our trip there, it would have already been a tremendous experience. Despite the gray weather, we had all

indulged in D.C.'s cheerful cherry blossom season, which was in full bloom throughout our stay. Many of us were determined to pack in as many sights as we could. Needless to say, D.C. alone provided an incredible experience for our JOOY group, and we were all rewarded with new friends, memorable meetings, and an excitement for our futures and the future of the Submarine Force.

#### The JOOY's high point

But the week was not over yet. While "White House Visit" had always been the last item on our itinerary, the details of what the White House visit would actually entail had been (in true Submariner fashion) written in mud. Though we reminded ourselves not to get our hopes up, it's difficult to simply ignore the possibility that you might come face to face with the President of the United States of America.

Standing in the Roosevelt Room, the White House staff informed us that the President was in an adjacent room signing an executive order on trade. Unfortunately his schedule was running just a little too tight to meet with us. We were, however, afforded the opportunity to meet Vice President Pence, and there was no loss of excitement in that honor. When he walked in, the excitement in the room was palpable. His smile was big and genuine. After welcoming our group, he immediately showed his Hoosier pride by calling out the Indiana natives in our group-Lt. Hans Nowak and his wife, Nicole. "It was an honor meeting Vice President Pence. He was extremely welcoming," Lt. Nowak commented. In true millennial fashion, we took a group selfie that he tweeted instantly.

The Vice President then gestured to the door we had all been eyeing since we had

Oval Office. He informed us that President of submarine officers.

We could hear him before we could see him, the voice I'd heard on the television and radio countless times in the last year. With tempered expectancy we entered the world, my boss. As Lt. Buonaccorso recalls it, "Sitting behind the Resolute Desk, the President welcomed us in and showed us his genuine appreciation for our service and for the sacrifices that our spouses make. We are all grateful to Rear Adm. Kreite of the National Security Council for setting the visit up." As we filed out of the office, will consider instituting frequent smallthe President congratulated us and shook hands with each of us. It's not every day that you receive an "atta-boy" in the Submarine Force; it's rarer still to receive that from the being able to meet with other officers very top of your chain of command.

#### **Unanticipated Benefits**

That short week rekindled an excitement and love for the challenges I am able to face

walked in the room, the one leading to the in this unique career. Being able to have discussions with other officers about our Trump had made time to meet our group contributions on our own boats and hear the perspectives of the people who delegate the orders that we carry out was beneficial in a way I could not have imagined. "[It was] amazing...the extent to which the senior leaders we engaged with were interested in room and there he was, the leader of the free our opinions; soliciting feedback from our group as to what challenges we face as young leaders serving in today's Submarine Force," said Lt. James Halsell of Squadron 7. "The interactions during our trip left me excited about the path ahead for our force and our Navy as a whole."

I hope that the submarine community group gatherings of geographically diverse junior officers in more casual forums. I cannot quite capture the significance of across the globe to simply talk about what makes us the same and what makes us different. Where our frustrations were similar, we discussed solutions to what could be force-wide issues. When our frustrations

differed, I was able to reconsider what about my command was driving the difference and reflect on whether I could promote change. I would love for other officers to be able to share the same kind of rejuvenation and community-building offered by the IOOY trip.

None of us could have imagined the opportunities and memories afforded by winning JOOY. It's not really an award that you seek to win. It's not even an award that you singularly win. Lt. Nowak offered sentiments that echoed those from all in our group: "I would not be where I am without the Sailors I have been honored to lead. They are the foundation for all my accomplishments...my Sailors are amazing." On behalf of our entire group of IOOYs, I sincerely thank all of the officials who met with us and restructured our perspective of this force. I also want to thank all of the amazing crews who work tirelessly and shape the impressive people who make up our community.

#### 2017 Submarine Force Junior Officers of the Year (JOOY)

Lt. Joseph Buonaccorso Rochester, N.Y. USS Texas (SSN 775)

Lt. Anthony Testino Pequannock, N.J. USS Springfield (SSN 761)

Lt. Adam Garfrerick Florence, Ala. USS Jimmy Carter (SSN 23)

Lt. Luke Talbot St. Joseph, Miss. USS Newport News (SSN 750)

Lt. James Halsell Anderson, Ind. USS Columbia (SSN 771)

Lt. Bryan Keck Spearfish, S.D. USS Pasadena (SSN 752)

Lt. Brent Shawcross Fairfax, Va.

USS Annapolis (SSN 760)

Lt. Peter Pappalardo Allentown, Pa. USS Topeka (SSN 754)

Lt. Krisandra Hardy Okinawa, Japan USS Florida (SSGN 728) (B)

Lt. Martin Schroeder Minneapolis, Minn. USS Louisiana (SSBN 743) (B)

Lt. Katherine Castro Hialeah, Fla. USS Michigan (SSGN 727) (B)

Lt. Hans Nowak Terre Haute, Ind. USS Tennessee (SSBN 734) (G)

Ens. Jace Waller Concord, N.C. USS Emory S. Land (AS 39)



President Trump and Vice President Pence meet with the Submarine Force Junior Officers of the Year at the White House.

20 | WINTER 2018 UNDERSEA WARFARE UNDERSEA WARFARE WINTER 2018 21 IN THE AGE OF INFORMATION, LOOKING UP A "HOW TO" ON NEARLY ANY SUBJECT CONCEIVABLE CAN MEAN A VISIT TO YOUTUBE. NOW, THANKS TO SUBMARINE LEARNING CENTER'S (SLC) SUBMARINE ON BOARD TRAINING (SOBT), EVEN WITH THE LOSS OF CONNECTIVITY "HOW TO" VIDEOS ARE READILY AVAILABLE IN EVERY AFLOAT SUBMARINER'S WORK SPACE.











The Submarine Learning Channel Surfaces

or Navigation Electronics Technician Senior Chief Petty Officer Rafael Arriaga, training "on demand" is an achievable reality even submerged on a submarine. Arriaga coordinates the SLC's, Submarine Learning Channel (SUBLC).

"SUBLC," says Arriaga, "is a 'You-Tube' like video series available on every submarine's Local Area Network (LAN) using the SEAWARE application designed and maintained by Division 2532, Under Sea Warfare (USW) Combat Systems Trainer Technology Development Branch of the Naval Undersea Warfare Center (NUWC).



"Division 2532, Under Sea Warfare (USW) Combat Systems Trainer Technology Development Branch at NUWC, Newport, our strategic partner, distributes all SOBT and SUBLC products via a hard drive biannually to every submarine crew.

"Now that we're continuing to expand our library, with over 130 videos of varying lengths and subjects, we're expanding In the photo above: the Submarine Learning Center's Learning Channel (SUBLC) welcome screen is the first stop for a quick review of an ever growing number of procedures for which a Sailor may be seeking a refresher.

















#### **Submarine Learning Channel Topics**

SS Soldering

SS RJ-45 Connector

SS FLIR Thermal Imager

SS Torque Wrench

SS M9 Service Pistol

SS M16 Series Rifle

SS Mossberg 500 Shotgun

SS MK48 Machine Gun

SS NFTI

SS SEIE Suit

SS Fire Fighting

SS Damage Control

SS Fiber Optics

SS Flooding

**SS Greasing Fundamentals** 

SS Plastic Waste Management

SS Oscilloscope

SS Signal Generator

SS Spectrum Analyzer

SSN 688 Ship Control

SS Topside Safety

33 Topside Salety

SS Cable Troubleshooting

**EMAT First Aid** 

SS Towed Array Tie-Off

**SS Submarine Mishaps** 

SSN 774 Ship Control

SS Diesel Lube Oil Sample

**SS LELT Integrity** 

SS LAN Box Troubleshooting

**SS Hand Measuring Tools** 

SSN 688 Diesel Freshwater Sample

SSN 774 Virginia Class Interior Communication System (ICS)

**SS Inertial Navigation** 

our distribution beyond submarines to include every homeport school house technical library." SOBT has been the onboard training resource for the Submarine Force since 1983, evolving along with both the delivery technology and fleet requirements for applied knowledge. In a sense, SUBLC was a logical next step for a Submarine Force driven by technological innovations.

Arriaga explains, "SUBLC addresses training deficiencies that a standard "click next" PowerPoint presentation just can't. Specifically, when a Sailor asks us 'How do I...,' a video demonstration is often a lot more intuitive than a slide presentation."

This aligns with the environment on a submarine, which involves as much doing as knowing. But, he concedes, that's not the most significant difference.

"We are primarily using Sailors to give the training rather than contracting a professional narrator to read a script. The intention is to have someone talking to the camera and making the video whom the Sailor recognizes as experienced and whom the Sailor can better relate to.

"The turn-around on a finalized video is about three times faster than interactive courseware (ICW). The feedback we have received so far from afloat units indicates that Sailors prefer being assigned a series of videos to review because the information gets absorbed far more quickly than through ICW.

"You can address small training deficiencies that aren't significant enough to dedicate a large ICW or classroom to with a three- to five-minute video. And we're hearing from the Fleet that subject matter taught by a fellow Sailor tends to be better received."

# Job-Specific Training Wherever You Might Be

On a day Arriaga and a commercial video production crew from Epsilon Systems Solutions are recording in Naval Submarine School's fire-fighting trainer, there's a sense of structure and organization that Arriaga says is essential to the timely development of short videos, which are beginning to populate SLC's SUBLC. Previous recordings include a variety of subjects (soldering, small arms, welding inspections, topside safety, plastic waste management, towed array tie-off, etc).

"Everyone has a job and a role," he says. "SLC has military project managers like me who coordinate efforts, military subject matter experts who review content for accuracy, and learning standards officers who enforce Navy-wide learning standards on each SOBT product.

"The entire content production process for a SUBLC video is defined in the SOBT developer's guide, but is straightforward to keep the focus on rapid, deployed learning. The trigger to create a video clip can vary but includes:



High temperatures in simulated conditions such as this bilge fire in the Naval Submarine School firefighting mirror those that can be found in real-world situations where proper SCBA wear is essential.

• Fleet feedback: SOBT conducts site visits to each homeport annually and within SEAWARE there's a feedback function that generates a report to SOBT.

- Submarine Learning Center needs: Videos to support schoolhouse courses that don't have facilities for demonstration.
- Referencing at-sea evaluation reports that indicate where we need to focus our training efforts."

"SOBT has worked with afloat units, maintenance facilities, and schoolhouse labs to create SUBLC videos. We have funding and a process to record and develop. What we are continuously requesting is knowledgeable personnel to give the demonstration and a facility to record it. Having a knowledgeable and invested professional makes the training click in the Sailor's head."

There are two critical questions. Does SUBLC work, and how is its effectiveness measured?

"Yes", says Arriaga to the first. "We have quantifiable evidence with recorded afloat usage numbers that indicate the products are being used. Effectiveness will be a much longer qualitative review. Regarding effectiveness, assessing afloat inspection results and direct fleet feedback through the SEAWARE application will be the catalyst for us to grow or change course."

"It's all measurable feedback. SEAWARE logs every time a product, video, or ICW is used and/or completed, so we have gross numbers in terms of views and visits."

"But SUBLC also has thumbs up and thumbs down icons on every video and a feedback window for comments just like YouTube."

"All this feedback comes to SOBT via NUWC, so when the ship's hard drive is returned, we have hard numbers and a very real sense in nearly real-time of which products are being viewed and which are helping

our Sailors. Computer-based training has had a negative connotation in the fleet in the past. We are attempting to close the feedback loop by receiving input directly from the Sailors afloat and grow the products to meet their needs instead of polishing the cannon ball."

And while SUBLC is still new, Arriaga has a sense of what's next.

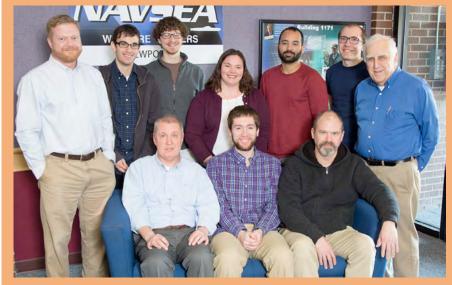
"I see us working on 360-degree videos," he says. "For instance, I see us producing a video for a ship traveling inbound to a selected port or harbor, integrating videos into ICW to replace slides, and reaching out to non-submarine training pipelines to share our products that apply to any Sailor

or other branch of service. Putting the service members back into computer-based training products is crucial in order for them to buy into the relevancy of what they are learning."

"That same SEAWARE application we use to push products to the fleet will have the capability to upload videos produced by afloat commands to share with SOBT for potential re-use and distribution to better integrate and collaborate."

"SLC and SOBT are gaining momentum, and it's a great time to be in an organization where we can identify a fleet-wide problem and then most importantly be able to provide a fleet-wide solution."

#### The people behind the program



Sitting, from left to right: Bryan Burman, Bradley Gonthier, Will Nichols. Standing, from left to right: Adam Miga, Nick Massa, Brian Sardinha, Denise Myrick, Alfonso Guzmán-Vázquez, Ryan Proulx, Gene Czepiel. Not shown: Josh Sadeck and Tim Sweet

USW Combat Systems Trainer Technology Development Branch provides advanced development, systems engineering support, and fleet support for multiple Navy training and combat systems. Main products from this branch include multiple variants of the Seaware learning management system, including Submarine On Board Training (SOBT), as well as distance support for SOBT. Code 2532 also focuses on human systems integration (HSI) research and engineering, providing products such as user-centered design, heuristic evaluations, experimentation, and HSI acquisition plans to multiple undersea warfare stakeholders

#### **DOD Releases 2018 Basic** Allowance for Housing Rates

The Department of Defense has released the 2018 Basic Allowance for Housing (BAH) rates. BAH increased an average of 0.7 percent as of Jan. 1. An estimated \$21 billion will be paid to approximately one million Service members.

Continuing to balance the growth in compensation costs, the 2018 BAH program expands the member cost-sharing element (out-of-pocket expense). Based on the authority provided in the FY 2016 National Defense Authorization Act, the cost-sharing element has increased to 4 percent for 2018, which means a typical member will absorb 4 percent of the national average housing cost by pay grade. Even with the increase in cost sharing, on average, BAH rates will increase approximately \$10 per month. A typical mid-grade enlisted member with dependents, for example, will find his/her BAH about \$19 per month higher than last year, while a typical junior officer without dependents will find his/her BAH about \$16 higher than last year.

An integral part of the BAH program is the provision of individual rate protection to all members. No matter what happens to measured housing costs, including the out-of-pocket costsharing adjustment, a member who maintains uninterrupted BAH eligibility in a given location will not see his/her BAH rate decrease. This ensures that members who have made long-term commitments in the form of a lease or contract are not penalized if the area's housing costs decrease.

For more information on BAH, including the 2018 rates and 2018 rate component breakdown, visit www.defensetravel. dod.mil/site/bah.cfm.

Service members can calculate their BAH payment by using the calculator at www.defensetravel.dod.mil/site/bahCalc.cfm.

#### Navy e-Learning Updates Web Address

Direct access to the online Navy e-Learning (NeL) management system website became available Oct. 23, 2017 at a new web ad-

The direct NeL link of https:// learning.nel.navy.mil is available 24/7 and will take Sailors directly to the 'My Learning' and 'Course Catalog' tabs of the NeL learning management system after logging on.

Although direct access to NeL is available through the Internet, a Common Access Card (CAC) is still required for NeL login. Courses on NeL have been standardized to run using the Internet Explorer browser.

Trainees using NeL complete over five million online courses a year, from a comprehensive catalog of 12,500 distance learning courses. The Naval Education and Training Command relies on NeL for use in schoolhouses for individual skills and skill refresher training.

To access NeL through a link on My Navy Portal (MNP), select the "Professional Resources" drop-down menu, then "Navy elearning Online Courses."

Users will need to update their saved bookmark to the new NeL URL.



#### **Navy Sets New Physical Fitness Standard** to Start Boot Camp

Beginning Jan. 1, Recruit Training Command, the Navy's only boot camp, will require recruits to pass an initial run standard before they may commence basic military training.

The initial run standard is evaluated on the 1.5 mile run of the first Physical Fitness Assessment (PFA) at boot camp. The initial run standard for male recruits will be 16 minutes 10 seconds and 18 minutes 7 seconds for female recruits.

To graduate boot camp, all recruits must score a satisfactory medium on the official Navy PFA. To ensure recruits advance toward this goal over their eight weeks of training, the initial run standard sets the minimum run time at which recruits must start training in order to meet their expected level of progress.

Recruits that fail to meet the initial run standard will have one chance to retest within 48 hours. If they fail the retest, recruits will be discharged from the Navy with an entry-level separation, which allows them to reapply at a later date with a waiver from Navy Recruiting Command.

For recruits who prove they are serious about physical fitness by achieving an outstanding high on their final PFA at boot camp, they will be meritoriously advanced to the next pay grade upon graduation.

Navy Recruiting Command provides recruits with a fitness and nutrition guide, which they can follow on their own or with the help of their recruiting office. Using the fitness and nutrition guide to prepare for the initial run standard, more recruits will report to boot camp physically fit, reducing attrition due to PFA failures and raising the quality of Sailors that reach the fleet.

A Sailor assigned to the submarine tender USS Frank Cable (AS 40) reunites with his family during his homecoming to Apra Harbor, Guam. Frank Cable departed Guam March 7, 2017 supporting maritime expeditionary operations in the U.S. 3rd Fleet area of operations and underwent a dry-dock phased maintenance availability at Vigor Industrial shipyard in Portland, Ore.



#### **Changes of Command**

**COMSUBPAC** 

COMSUBGRU 9 Rear Adm. Blake Converse relieved

Rear Adm. John Tammen

Rear Adm. Randy Crites

COMSUBRON 4 Capt. Brian Sittlow relieved Capt. John McGunnigle

COMSUBDEVRON 5 Capt. Stephen Mack relieved Capt. Robert Gaucher

COMSUBRON 11 Capt. Christopher Cavanaugh relieved Capt. Brian Davies

COMSUBRON 16

COMSUBRON 17 Capt. Nicholas Tilbrook relieved Capt. Mark Schmall

COMSUBRON 19 Capt. Brian Humm

COMSUBRON 20 Capt. Bob Wirth relieved Capt. Thomas Buchanan

NSSC Pearl Harbor Cmdr. Christopher C. Lindberg relieved Cmdr. Michael D. Eberlein

Trident Refit Facility, Kings Bay Capt. Paul Dinius relieved Capt. Gunter Braun

Cmdr. Jeff Yackeren relieved Cmdr. Paul Reinhardt

Cmdr. Dave Brooks relieved Cmdr. David Forman

USS Buffalo (SSN 715) Cmdr. Paul Lee relieved

USS California (SSN 781) Cmdr. Dave Payne relieved Cmdr. Eric Sager

Cmdr. John W. Stafford

USS Colorado (PCU 788) Cmdr. Ken Franklin

USS Columbus (SSN 762) Cmdr. Peter French relieved Capt. Albert Alarcon

#### USS Connecticut (SSN 22) Cmdr. Carl Trask relieved Cmdr. Brian Taddiken

USS Florida (SSGN 728) (G) Capt. Greg Kercher relieved Capt. Bill McKinney

USS Georgia (SSGN 729) (G) Capt. Doug Jordan relieved Capt. Mike Badorf

USS Greeneville (SSN 772) Cmdr. Terry A. Nemec relieved Cmdr. Gabe A. Anseeuw

USS Jimmy Carter (SSN 23) Cmdr. Keith Floyd relieved Cmdr. Melvin Smith

USS Kentucky (SSBN 737) (B) Cmdr. Kenneth Roman relieved Cmdr. John Hale

USS Kentucky (SSBN 737) (G) Cmdr. James Hurt relieved Cmdr. Brian Freck

USS Louisiana (SSBN 743) (G) Cmdr. Martin E. Sprague relieved Cmdr. Melvyn N. Naidas

USS Louisville (SSN 724) Cmdr. Robert Rose relieved Cmdr. David Cox

USS Maryland (SSBN 738) (B) Cmdr. Jesse Pruett relieved Cmdr. Geoff Patterson

USS Michigan (SSGN 727) (B) Capt. Bradley Terry relieved Capt. Joseph Turk

USS Michigan (SSGN 727) (G) Capt. James Belz relieved Capt. Gustavo Gutierrez

USS Missouri (SSN 780) Cmdr. George Howell relieved Cmdr. Fraser Hudson

USS New Hampshire (SSN 778) Cmdr. Todd Brandon relieved Cmdr. Jason Weed

USS North Dakota (SSN 784) Cmdr. Mark Robinson relieved Cmdr. Mike Hollenbach

USS Pasadena (SSN 752) Cmdr. Corey Poorman relieved Cmdr. Kenneth Douglas

USS Pittsburgh (SSN 720) Cmdr. Jason Deichler relieved Cmdr. Neil Colston

USS San Juan (SSN 751) Cmdr. Ravi Desai relieved Cmdr. John Craddock

USS Scranton (SSN 756) Cmdr. Aaron Peterson relieved Cmdr. Ronald Stowe

USS Tennessee (SSBN 734) (B) Cmdr. Paul Seitz relieved Cmdr. Chas McLenithan

USS Tennessee (SSBN 734) (G) Cmdr. Jon Schaffner relieved Cmdr. Chris Bohner

USS Washington (SSN 787) Cmdr. Gabe Cavazos relieved Capt. Jason Schneider

USS West Virginia (SSBN 736) (B) Cmdr. Jared Wyrick relieved Capt. Joe Coleman

#### **Oualified for Command**

Lt. Cmdr. Christopher Abplanalp Naval Submarine School Groton

Lt. Cmdr. Richard Ali USS Nevada (SSBN 733) (G)

Lt. Garrett Allen USS Tucson (SSN 770)

Lt. Christopher Andrews USS Chevenne (SSN 773)

Lt. Cmdr. David Beam USS Vermont (SSN 792)

Lt. Cmdr. Vincent Bove CTF 69 Lt. Cmdr. Matthew Braden

COMSUBGRU 7 Lt. Cmdr. Patrick Bray COMSUBRON 11

Lt. Cmdr. Burnes Brown COMSUBRON 1 Lt. Cmdr. Kyle Calton

USS North Dakota (SSN 784) Lt. David Camp

USS Pennsylvania (SSBN 735) (B) Lt. Cmdr. Rene Cano

DNI/DDNI NISS Lt. Cmdr. Patrick Cashin

USS Maine (SSBN 741) (B) Lt. Cmdr. Timothy Chadwick USS San Juan (SSN 751)

Lt. Cmdr. John Chester NWID Kings Bay Ga.

Lt. Cmdr. Amando Cope USS Asheville (SSN 758)

Lt. Jeffrey Cornielle NSTCP SITE FTT

Lt. Cmdr. Dennis Crump CTF 69

Lt. Cmdr. Scott Edminster NPTU Charleston BOS

Lt. Luis Estrada USS Bremerton (SSN 698)

Lt. Cmdr. Danial Fickling N1 STUDENTS & TT

Lt. Matthew Fisher USS Columbia (SSN 771)

Lt. Cmdr. Michael Fritts CPELT NPEB

Lt. Cmdr. Michael Furlan COMSUBRON 12

Lt. Cmdr. Jeffrey Gammon USS Maryland (SSBN 738) (B)

Lt. Cmdr. Daniel Garcia USS Pittsburgh (SSN 720)

Lt. Cmdr. Sean Genis USS Bremerton (SSN 698)

Lt. Cmdr. Preston Gilmore USS Illinois (SSN 786)

Lt. Cmdr. Jason Goeller USS Pennsylvania (SSBN 735) (G)

Lt. Cmdr. Chad Guillerault USS Virginia (SSN 774)

Lt. John Hartsog USS Florida (SSGN 728) (G)

Lt. Donald Head USS Louisiana (SSBN 743) (B)

Lt. Cmdr. Ryan Hilger OPNAV

Lt. Andrew Hill USS Minnesota (SSN 783)

Lt. Cmdr. Joseph Huck **OPNAV** 

Lt. Cmdr. Michael Humara COMSUBPAC

Lt. Cmdr. Jeremy Janney Dir. Div. Naval Reactors DOE

Lt. Cmdr. Towney Kennard FFC Nuclear Propulsion Exam Board

Presidents Board of Inspection & Surv. Lt. Cmdr. Joshua Lail

FFC Nuclear Propulsion Exam Board Lt. Cmdr. Andrew Lawrence USS Ohio (SSGN 726) (G)

Lt. Cmdr. Justin Kirkpatrick

Lt. Cmdr. Matthew Lewis USS Virginia (SSN 774)

Lt. Cmdr. Joseph Lopiccolo Trident Training Facility Bangor

Lt. Joshua Ludwig USS Georgia (SSGN 729) (B)

Lt. Cmdr. Kerry Major FFC Nuclear Propulsion Exam Board

Lt. Cmdr. Jonathan Martin USS Wyoming (SSBN 742) (G)

Lt. Cmdr. Gregory McCarthy COMPACELT

#### Welcome Home!

Photo by MCS 3rd Class Alana Langdon



Rear Adm. Darvl Caudle relieved Rear Adm. Frederick "Fritz" Roegge

COMSUBGRU 10 Rear Adm. Michael Holland relieved

Capt. Eric Nash relieved Capt. Adam Palmer

Capt. Michael Lewis relieved

USS Alabama (SSBN 731) (B)

USS Alaska (SSBN 732) (B)

Cmdr. Micah Maxwell

USS Cheyenne (SSN 773) Cmdr. John T. Gonser relieved

Cmdr. Reed Koepp relieved

- Lt. Cmdr. Samuel Mills S NLEC Newport
- Lt. Cmdr. Gregory Mischler USS Seawolf (SSN 21)
- Lt. Cmdr. Dennis Monroe DIRSSP Washington, DC
- Lt. Cmdr. Jacob Montoya USS West Virginia (SSBN 736) (G)
- Lt. Cmdr. William Murphy USS Nevada (SSBN 733) (B)
- Lt. Cmdr. Joshua Peters CPFLT Nuclear Propulsion Exam. Bd.
- Lt. Cmdr. Jarrad Pilgrim USSTRATCOM SPPAC
- Lt. Cmdr. Andrew Regalado USS Alaska (SSBN 732 (G)
- Lt. Cmdr. Jeffrey Roberts S NSS Groton, Conn.
- Lt. Jason Rogers USS Buffalo (SSN 715)
- Lt. Cmdr. Martin Roschmann SUBLANT Training & Evaluation
- Lt. Cmdr. Brian Ross Dir. Div. Naval Reactors DOE
- Lt. Cmdr. Karl Sault COMSUBLANT
- Lt. Cmdr. Michael Smith CNAVPERSCOM Millington
- Lt. Cmdr. Reid Smythe USS Alexandria (SSN 757)
- Lt. William Spears USS Columbia (SSN 771)
- Lt. Cmdr. Jason Spray COMSUBRON 6
- Lt. Cmdr. Andrew Streenan FFC Nuclear Propulsion Exam. Board
- Lt. David Taweel USS Columbia (SSN 771)
- Lt. Cmdr. Scott Tedrick USS Georgia (SSGN 729) (B)
- Lt. Cmdr. Alan Teele USSTRATCOM NAOC
- Cmdr. Adam Thomas USSTRATCOM
- Lt. Cmdr. Dillon Tolmie USPACOM
- Lt. Cmdr. Terry Turner
- USS Tennessee (SSBN 734) (G) Lt. Nicholas Tuuk
- USS Seawolf (SSN 21) Lt. Nicholas Vilardi

USS Annapolis (SSN 760)

- Lt. Cmdr. John Walker COMSUBRON 11
- Lt. Damien Wall USS Dallas (SSN 700)
- Lt. Cmdr. Grant Wanier USPACOM
- Lt. Cmdr. George Watkins COMSUBRON 16
- Lt. Cmdr. Joshua Weiss Trident Training Facility Bangor
- Lt. Cmdr. Dustin White Student Marine Corps Univ.
- Lt. Cmdr. Thomas Williams PSBFOROPS COMP
- Lt. Cmdr. Matthew Wolf Pres. Board of Inspection & Surv. S D
- Lt. Cmdr. Adam Zaker USS Texas (SSN 775)
- Lt. Cmdr. Bradley Zingone USSTRATCOM SPPAC

#### **Qualified in Submarines**

- Lt. j.g. Danny Abdeen USS Kentucky (SSBN 737) (G)
- Lt. j.g. Eric Alamillo USS Hampton (SSN 767)
- Lt. j.g. Gilesa Allison USS Mississippi (SSN 782)
- Lt. j.g. Payton Alsup USS New Mexico (SSN 779)
- Lt. j.g. Steven Arnold USS Columbia (SSN 771)
- Lt. Jorge Arvelo USS Newport News (SSN 750)
- Lt. Kelby Aten
- USS Key West (SSN 722)
- Lt. j.g. Mark Atkins USS Providence (SSN 719)
- Lt. j.g. Austin Baker USS Toledo (SSN 769)
- Lt. j.g. Lee Becker USS Cheyenne (SSN 773)
- Lt. j.g. Mitchell Bell USS Olympia (SSN 717)
- Lt. j.g. Brian Benedicks USS Asheville (SSN 758)
- Lt. j.g. Jordan Bennett USS Hartford (SSN 768)
- Lt. j.g. Nicholas Biela USS Wyoming (SSBN 742) (B)
- Lt. Eric Biggs USS Jimmy Carter (SSN 23)

- Lt. Nicholas Birger NROTC University New Mexico
- Lt. j.g. Aaron Bishop USS California (SSN 781)
- Lt. j.g. Reston Bishop USS Colorado (SSN 788)
- Lt. Jason Bombardier USS Nebraska (SSBN 739) (B)
- Lt. j.g. Robert Bostock USS Henry M. Jackson (SSBN 730) (G)
- Lt. Clayton Bosworth USS California (SSN 781)
- Lt. Ryan Boyer USS Minnesota (SSN 783)
- Lt. Erik Breitenbach USS Bremerton (SSN 698)
- Lt. Casey Brown USS Scranton (SSN 756)
- Lt. Jeremy Brown USS John Warner (SSN 785)
- Lt. j.g. Jacob Brumbach USS Connecticut (SSN 22)
- Lt. j.g. Grant Buckley USS Alexandria (SSN 757)
- Lt. Samuel Butts USS Nebraska (SSBN 739) (B)
- Lt. Michael Byrge USS Hampton (SSN 767)
- Lt. Rafael Byron USS Buffalo (SSN 715)
- Lt. Thomas Cahill USS Providence (SSN 719)
- Lt. Taylor Calibo USS Greeneville (SSN 772)
- Lt. j.g. Zachary Callahan USS Kentucky (SSBN 737) (B)
- Lt. j.g. Benjamin Canfield USS Columbia (SSN 771)
- Lt. j.g. Thomas Catalano USS Connecticut (SSN 22)
- Lt. Scott Cebulksi USS Maryland (SSBN 738) (G)
- Lt. Robert Chavez USS Alaska (SSBN 732) (B)
- Lt. j.g. William Chilton USS Greeneville (SSN 772)
- Lt. Jacob Christiansen USS Georgia (SSGN 729) (B)
- Lt. j.g. Justin Cline USS North Dakota (SSN 784)
- Lt. Benjamin Cook USS Wyoming (SSBN 742) (B)

- Lt. Michael Cristiano USS Maryland (SSBN 738) (B)
- Lt. j.g. Sean Cunningham USS Cheyenne (SSN 773)
- Lt. j.g. Tracy Daniels USS San Francisco (SSN 711)
- Lt. Robert Darby USS Michigan (SSGN 727) (B)
- Lt. j.g. Hugh Davison USS Montpelier (SSN 765)
- Lt. j.g. Katherine Dawley USS Louisiana (SSBN 743) (G)
- Lt. j.g. Christopher Debarge USS *Charlotte* (SSN 766)
- Lt. j.g. Vincenzo Delvillano USS Toledo (SSN 769)
- Lt. j.g. Isaac Derego USS Indiana (SSN 789)
- Lt. Gaddis Diazperez USS Albany (SSN 753)
- Lt. j.g. John Dickmann USS Tucson (SSN 770)
- Lt. Patrick Dillow USS Henry M. Jackson (SSBN 730) (G)
- Lt. Matthew Disher USS New Mexico (SSN 779)
- Lt. Thomas Dowd USS Alexandria (SSN 757)
- Lt. Jon Drake USS Henry M. Jackson (SSBN 730) (G)
- Lt. j.g. Corey Drozdowski USS New Hampshire (SSN 778)
- Lt. j.g. Ryan Duffy USS Mississippi (SSN 782)
- Lt. j.g. Aaron Dupere USS John Warner (SSN 785)
- Lt. Malcolm Eaton USS Illinois (SSN 786)
- Lt. j.g. Matthew Eblin USS West Virginia (SSBN 736) (G)
- Lt. j.g. Alexander Egber USS Pennsylvania (SSBN 735) (B)
- Lt. j.g. Nathan English USS Kentucky (SSBN 737) (B)
- Lt. j.g. Nicholas Evans USS Pennsylvania (SSBN 735) (B)
- Lt. Paul Evans USS Louisiana (SSBN 743) (B)
- USS Providence (SSN 719) Lt. j.g. John Flores USS Alexandria (SSN 757)

Lt. Stephen Fitzpatrick

- Lt. Jordan Foley USS Annapolis (SSN 760)
- Lt. Patrick Foley NSSC Kings Bay
- Lt. Rvan Fritz USS Charlotte (SSN 766)
- Lt. Robert Gacki USS Kentucky (SSBN 737) (G)
- Lt. j.g. Francisco Galindez de Jesus USS Indiana (SSN 789)
- Lt. Bryant Giorgi USS Nebraska (SSBN 739) (B)
- Lt. j.g. Alexander Graham USS Missouri (SSN 780)
- Lt. j.g. Ian Gray USS West Virginia (SSBN 736) (G)
- Lt. Robert Greer USS Ohio (SSGN 726) (G)
- Lt. j.g. William Gregory USS Colorado (SNN 788)
- Lt. j.g. Kevin Grothe USS Michigan (SSGN 727) (G)
- Lt. j.g. Andrew Haggerty USS Topeka (SSN 754)
- Lt. Matthew Hait USS Maryland (SSBN 738) (G)
- Lt. j.g. Ganesh Harihara USS Providence (SSN 719)
- Lt. j.g. Cameron Harrigan USS Newport News (SSN 750)
- Lt. j.g. Jeremy Heimke USS Charlotte (SSN 766)
- Lt. Douglas Heinzel USS Louisiana (SSBN 743) (G)
- Lt. j.g. Kevin Heister USS Nebraska (SSBN 739) (G)
- Lt. Kevin Hickey USS Missouri (SSN 780)
- Lt. j.g. Aaron Hoffman USS Topeka (SSN 754)
- Lt. j.g. Erik Hoffstadt USS Rhode Island (SSBN 740) (B)
- Lt. Joshua Hyland USS Alabama (SSBN 731) (B)
- USS Key West (SSN 722) Lt. Charles Johnson

USS Georgia (SSGN 729) (G)

Lt. Robert Inglis

- Lt. j.g. Jeremy Jorge USS *Montpelier* (SSN 765)
- Lt. j.g. Thomas Kasmer USS North Dakota (SSN 784)

- Lt. David Kennedy USS Henry M. Jackson (SSBN 730) (B)
- Lt. j.g. Ryan Keyes USS Oklahoma City (SSN 723)
- Lt. j.g. Michael Kirkpatrick USS *Washington* (SSN 787)
- Lt. Walker Klenk USS New Mexico (SSN 779)
- Lt. j.g. Ryan Koller USS Toledo (SSN 769)
- Lt. j.g. Jason Koncsol USS Pennsylvaina (SSBN 735) (G)
- Lt. Owen Kownacki USS Colorado (SSN 788)
- Lt. Brooks Knutson USS Maryland (SSBN 738) (G)
- Lt. j.g. David Kramer USS Wyoming (SSBN 742) (B)
- Lt. Jarod Kramer USS Louisiana (SSBN 743) (B)
- Lt. j.g. Thomas Krysil USS Wyoming (SSBN 742) (G)
- Lt. Justin Lamothe USS West Virginia (SSBN 736) (G)

- Lt. Daniel Lee USS Nebraska (SSBN 739) (G)
- Lt. Philip Lee NROTC USD SDSU DC
- Lt. j.g. Jacob Liebert USS Nevada (SSBN 733) (G)
- Lt. j.g. Christopher Linich USS Cheyenne (SSN 773)
- Lt. j.g. Keaton Lockhart USS Ohio (SSGN 726) (B)
- Lt. David Mann USS North Dakota (SSN 784)
- Lt. Tilford Mansfield USS Kentucky (SSBN 737) (B)
- Lt. Kevin Martin
- USS Alabama (SSBN 731) (G) Lt. j.g. Christopher Masters
- USS Dallas (SSN 770) Lt. j.g. Joseph McAndrews USS Jefferson City (SSN 759)
- Lt. j.g. George McClymont USS Santa Fe (SSN 763)
- Lt. j.g. Dylan McCrea USS Michigan (SSGN 727) (G)

- Lt. j.g. Peyton McDonald USS Boise (SSN 764)
- Lt. Scott McLennan USS San Francisco (SSN 711)
- Lt. Michael McPherson USS Washington (SSN 787)
- Lt. j.g. Daniel Meaney USS West Virginia (SSBN 736) (B)
- Lt. j.g. Quinilan Melvin USS Colorado (SSN 788)
- Lt. Keegan Merkert USS Connecticut (SSN 22)
- Lt. Trevor Milford
- USS Greeneville (SSN 772) Lt. j.g. Andrew Miller
- USS Alaska (SSBN 732) (G) Lt. j.g. Jeffrey Mitchell
- USS West Virginia (SSBN 736) (B) Lt. j.g. Killian Monley USS Tennessee (SSBN 734) (G)
- Lt. Gregory Morgan USS Tucson (SSN 770)
- Lt. j.g. Zachary Motter USS Oklahoma City (SSN 723)

#### COMSUBPAC Winners of 2017 Battle "E" Efficiency **Competition Awards:**

SUBRON 1 USS Jacksonville (SSN 699) Cmdr. S. Faulk Lt. Cmdr. L. Arbuckle (D) Lt. Cmdr. A. Stutzman (R) ETRCM K. Rollert (D) ETRCS R. Branam (R)

SUBDEVRON 5 USS Jimmy Carter (SSN 23) Cmdr. M. Smith (D) Cmdr. E. Floyd (R) Lt. Cmdr. A. Wilson CMDCM S. Peirsel (D) CMDCM P. Walters (R)

#### SUBRON 7

USS Columbia (SSN 771) Cmdr. D. Edgerton Lt. Cmdr. T. Bullock (D) Lt. Cmdr. J. Smith (R) CMDCM A. Torres (D) ETVCS J. Karns (R)

#### SUBRON 11

USS Pasadena (SSN 752) Cmdr. K. Douglas (D) Cmdr. C. Poorman (R) Lt. Cmdr. J. Smith (D) Lt. Cmdr. H. Martin (R) ITSCM M. Kwiecinski

#### SUBRON 15

USS Oklahoma City (SSN 723) Cmdr. T. Odonnell Lt. Cmdr. S. Welch (D) Lt. Cmdr. C. Christofk (R) FTCM B. Edmiston

SUBRON 17 USS Alabama (SSBN 731)(B) Cmdr. P. Reinhardt (D) Cmdr. J. Yackeren (R) Lt. Cmdr. D. Latia (D) Lt. Cmdr. R . Lowe (R) FTCM T. Leonard (D) MMACS M. Pearson (R)

USS Alabama (SSBN 731)(G) Cmdr. M. Chapman Lt. Cmdr. J. Quimby CMDCM S. Rauch

#### SUBRON 19

USS Ohio (SSGN 726)(B) Capt. D. Soldow Lt. Cmdr. T. Dixon (D) Lt. Cmdr. A. Simons (R) FTCM S. Bice

USS Ohio (SSGN 726)(G) Capt. G. Miranda Lt. Cmdr. J. Parm

MMACM A. Lee

Special Category Submarine Tender USS Emory S. Land (AS 39) Capt. D. Bradley Cmdr. R. Lopez CMDCM W. Greene

Special Category ARCO (ARDM 5) Lt. Cmdr. Z. Harry Lt. Cmdr. N. Chiudioni CMDCM J. Gruber

Special Category Undersea Rescue Command Capt. M. Hazenberg (D) Cmdr. M. Eberlein (R) Lt. Cmdr. J. Babick HMCM F. Lazarin

**DOWN**LINK

Lt. Samuel Murphy USS La Jolla (SSN 701)

Lt. j.g. Sean Murphy USS Henry M. Jackson (SSBN 730) (B)

Lt. j.g. Michael Naclerio USS Alaska (SSBN 732) (G)

Lt. j.g. Tyler Newland USS Hawaii (SSN 776)

Lt. j.g. Christian Nicholson USS Pasadena (SSN 752)

Lt. Michael Nielson USS Colorado (SSN 788)

Lt. j.g. Eric Nordquist USS Maine (SSBN 741) (B)

Lt. Temitope Ohiomoba USS Bremerton (SSN 698)

Lt. Ryan Olehausen USS Columbia (SSN 771)

Lt. j.g. Matthew Padilla USS Kentucky (SSBN 737) (B)

Lt. j.g. Richard Padron USS Alaska (SSBN 732) (B)

Lt. Gregory Pavone USS North Dakota (SSN 784)

Lt. j.g. Marcus Perez USS Jacksonville (SSN 699)

Lt. j.g. Andrew Podgorski USS Henry M. Jackson (SSBN 730) (G)

Lt. j.g. Gregory Poser USS Connecticut (SSN 22)

Lt. j.g. Zachary Powers USS Dallas (SSN 700)

Lt. j.g. Joshua Prince USS New Hampshire (SSN 778)

Lt. Travis Probe USS Scranton (SSN 756)

Lt. j.g. Andrew Pytlinski USS Toledo (SSN 769)

Lt. j.g. Michael Quinlan USS Hawaii (SSN 776)

Lt. j.g. Mason Rabalais

USS Mississippi (SSN 782) Lt. j.g. Lyndel Raiford

USS Springfield (SSN 761)

Lt. Braden Reiner USS Columbus (SSN 762)

Lt. j.g. Christopher Reynolds USS Topeka (SSN 754)

Lt. Philip Reynolds

USS Providence (SSN 719) Lt. Wesley Riley USS Cheyenne (SSN 773)

Lt. Jonathan Rodgers USS Dallas (SSN 700)

Lt. Peter Roemer USS Tucson (SSN 770)

Lt. Christopher Rogeness USS Alexandria (SSN 757)

Lt. j.g. Josiah Ross USS Olympia (SSN 717)

Lt. j.g. Thomas Rowland USS Alabama (SSBN 731) (G)

Lt. Wesley Rudy USS Louisiana (SSBN 743) (B)

Lt. Andrew Rydalch USS Alabama (SSBN 731) (B)

Lt. j.g. Stephen Ryker USS Alabama (SSBN 731) (B)

Lt. j.g. Michael Schmitz USS Tennessee (SSBN 734) (G)

Lt. Kristin Schoemaker USS Ohio (SSGN 726) (G)

Lt. j.g. Gerald Schrader USS Florida (SSGN 728) (G)

Lt. j.g. Joseph Scordino USS Illinois (SSN 786)

Lt. Michael Selover USS Virginia (SSN 774)

Lt. j.g. Matthew Sheeler USS Topeka (SSN 754)

Lt. Derrick Simons USS Louisiana (SSBN 743) (G)

Lt. Michael Sjoholmsierchio USS Maryland (SSBN 738) (B)

Lt. j.g. Benjamin Smith USS North Dakota (SSN 784)

Lt. j.g. Isaac Smith USS Topeka (SSN 754)

Lt. Joshua Smith

USS Seawolf (SSN 21)

Lt. Samuel Smith USS Kentucky (SSBN 737) (B)

Lt. j.g. Scott Smith USS West Virginia (SSBN 736) (B)

Lt. j.g. Stephen Smith USS Georgia (SSBN 729) (B)

Lt. j.g. Nathan Staats USS Alaska (SSBN 732) (B)

Lt. Jonathan Stack USS Annapolis (SSN 760)

Lt. Christopher Stevens USS Mississippi (SSN 782)

Lt. Nicholas Stiegman USS Louisiana (SSBN 743) (G) Lt. Matthew Storm USS Louisville (SSN 724)

Lt. j.g. Blake Stout USS Hampton (SSN 767)

Lt. j.g. Mark Strine USS Annapolis (SSN 760)

Lt. j.g. Cody Stueve USS Tennessee (SSBN 734) (G)

Lt. j.g. Michael Sullivan USS Tennessee (SSBN 734) (G)

Lt. j.g. Tyler Susa USS Florida (SSGN 728) (B)

Lt. Ross Sygulla USS Henry M. Jackson (SSBN 730) (B)

Lt. j.g. Elliot Sykora USS Tennessee (SSBN 734) (G)

Lt. Manasseh Szwabowski USS Jacksonville (SSN 699)

Lt. j.g. Joshua Taft USS Wyoming (SSBN 742) (G)

Lt. Troy Tauber USS Missouri (SSN 780)

Lt. Andrew Taylor USS Key West (SSN 722)

Lt. Alexander Teator USS Pennsylvania (SSBN 735) (B)

Lt. j.g. Whitney Tharp USS Mississippi (SSN 782)

Lt. Nathan Thiem USS Louisville (SSN 724)

Lt. j.g. Tyler Thomas USS Tucson (SSN 770)

Lt. j.g. Mackenzie Threlkeld USS Ohio (SSGN 726) (B)

Lt. j.g. Connor Timmins USS North Carolina (SSN 777)

Lt. j.g. Benjamin Todd USS North Carolina (SSN 777)

Lt. j.g. Laura Towle USS Georgia (SSGN 729) (B)

Lt. Emanuel Towns USS Annapolis (SSN 760)

Lt. James VanKirk USS Ohio (SSGN 726) (G)

Lt. j.g. Justin Versteeg USS Cheyenne (SSN 773)

Lt. j.g. Derek Von Disterlo USS Springfield (SSN 761)

Lt. Michael Vongonten USS North Dakota (SSN 784)

Lt. j.g. Zachary Vrtis USS Chicago (SSN 721) Lt. j.g. Laura Wainikainen USS Georgia (SSGN 729) (B)

Lt. Johnathan Wargi USS Connecticut (SSN 22)

Lt. Eric Washkewicz USS Hartford (SSN 768)

Lt. j.g. Thomas Wegener USS Florida (SSGN 728) (G)

Lt. j.g. Aleksander Weismantel USS Annapolis (SSN 760)

Lt. j.g. Nicholas Weithman USS Maine (SSBN 741) (G)

Lt. Andrew Wilkins USS Olympia (SSN 717)

Lt. j.g. Jon Williams USS Charlotte (SSN 766)

Lt. j.g. Sean Williams USS Charlotte (SSN 766)

Lt. j.g. Heather Willis USS Louisiana (SSBN 743) (B)

Lt. Jordan Wingate USS Greeneville (SSN 772)

Lt. j.g. Benjamin Winter USS Georgia (SSGN 729) (B)

Lt. Albert Wong USS Olympia (SSN 717)

Lt. j.g. Cole Yager USS Ohio (SSGN 726) (B)

Lt. j.g. Andrew Zellman USS Seawolf (SSN 21)

Lt. j.g. Matthew Ziesmer USS Louisiana (SSBN 743) (G)

#### **Qualified Nuclear Engineering Officer**

Lt. j.g. Danny Abdeen USS Kentucky (SSBN 737) (G)

Lt. Brian Acquaviva USS North Dakota (SSN 784)

Lt. Travis Adams USS Kentucky (SSBN 737) (G)

Jared Anongos USS Nevada (SSBN 733) (B)

Lt. Stuart Ardissono USS Jimmy Carter (SSN 23)

USS Columbia (SSN 771) Lt. j.g. Steven Arnold USS Columbia (SSN 771)

Lt. Nathan Arnold

Lt. Jorge Arvelo USS Newport News (SSN 750)

USS Maine (SSBN 741) (G) Lt. Harrison Askew

Lt. Kelby Aten USS Key West (SSN 722)

USS Washington (SSN 787)

Lt. j.g. Ryder Ashcraft

Lt. j.g. Mark Atkins USS Providence (SSN 719)

Lt. Andrew Austin CNRC Millington, Tenn.

Lt. David Baxter S PG MIT Cambridge Mass. Lt. Andrew Beliveau

USS Maine (SSBN 741) (B) Lt. Leonardo Benavides

USS Olympia (SSN 717) Lt. j.g. Brian Benedicks USS Asheville (SSN 758)

Lt. j.g. Jordan Bennett USS Hartford (SSN 768)

Lt. Martin Bennett CTF 69

Lt. Tyler Bergman LSFÓ OPCON CTR

USS Wyoming (SSBN 742) (B) Lt. Eric Biggs USS Jimmy Carter (SSN 23)

Lt. j.g. Nicholas Biela

Lt. Nicholas Birger NROTC University New Mexico

Lt. Michael Birnbaum USS Missouri (SSN 780)

Lt. John Blake USS Tucson (SSN 770)

Lt. Brian Bloom USS Pittsburgh (SSN 720)

Lt. Nicholas Bogart USS John Warner (SSN 785)

Lt. Jason Bombardier USS Nebraska (SSBN 739) (B) Lt. Benjamin Bondurant

CTF 65 Lt. Evan Boyce

USS Tennessee (SSBN 734) (G)

Lt. Ryan Boyer

USS Minnesota (SSN 783) Lt. William Boykin

USS Alabama (SSBN 731) (G)

Lt. Erik Breitenbach USS Bremerton (SSN 698)

Lt. Andrew Brink USS Scranton (SSN 756) Lt. Lindsay Brock NNPTC Charleston, S.C.

Lt. Casey Brown USS Scranton (SSN 756)

Lt. Chase Brown USS Alexandria (SSN 757)

Lt. Jeremy Brown USS John Warner (SSN 785)

Lt. j.g. Jacob Brumbach USS Connecticut (SSN 22)

Lt. j.g. Grant Buckley USS Alexandria (SSN 757)

Lt. Andrew Butler NROTC Carnegie Mellon Univ.

Lt. Edward Butler USS Nevada (SSBN 733) (B)

Lt. Taylor Butler USS Maine (SSBN 741) (G)

Lt. Samuel Butts USS Nebraska (SSBN 739) (B)

Lt. Michael Byrge USS Hampton (SSN 767)

Lt. Rafael Byron USS Buffalo (SSN 715)

Lt. Taylor Calibo

USS Greeneville (SSN 772) Lt. Elijah Callaghan

USS Tennessee (SSBN 734) (B)

Lt. j.g. Zachary Callahan USS Kentucky (SSBN 737) (B)

Nicholas Campbell USS *Newport* News (SSN 750) Lt. j.g. Benjamin Canfield

USS Columbia (SSN 771) Lt. Lauren Carpenter USS Michigan (SSGN 727) (G)

Lt. Antonio Carreno USS Alaska (SSBN 732) (G)

Lt. Charles Celerier

USS Topeka (SSN 754) Lt. Robert Chavez USS Alaska (SSBN 732) (B)

Lt. Jacob Christiansen USS Georgia (SSGN 729) (B)

Lt. Evan Christman DIRDIVOFNREACDOE

Lt. Codi Clark

Lt. Nicholas Clark USS Mississippi (SSN 782)

USS Bremerton (SSN 698)

Lt. Trevor Cleary USS Connecticut (SSN 22) Lt. j.g. Justin Cline USS North Dakota (SSN 784)

Lt. j.g. Mark Colby USS Pasadena (SSN 752)

Lt. Devon Colmer USS San Juan (SSN 751)

Lt. Benjamin Cook USS Wyoming (SSBN 742) (B)

Lt. Edgard Corea USS Alexandria (SSN 757)

Lt. Michael Cristiano USS Maryland (SSBN 738) (B)

Lt. Chase Cummins USS Greeneville (SSN 772)

Lt. Matthew Cutts USS Hartford (SSN 768)

Lt. Robert Darby USS Michigan (SSGN 727) (B)

Lt. j.g. Hugh Davison USS Montpelier (SSN 765)

Lt. j.g. Katherine Dawley USS *Louisiana* (SSBN 743) (G)

Lt. j.g. Christopher DeBarge

USS Charlotte (SSN 766) Lt. Matthew Dehart

USS Toledo (SSN 769)

Lt. j.g. Isaac Derego USS Indiana (SSN 789) Lt. Benjamin Desch USS Henry M. Jackson (SSBN 730) (G)

**DOWN**LINK

Lt. Gaddis Diazperez USS Albany (SSN 753)

Lt. Matthew Dickerman USS Springfield (SSN 761)

Lt. Steven Digiannurio NROTC Forida A&M Univ.

Lt. Patrick Dillow USS Henry M. Jackson (SSBN 730) (G)

Lt. William Dorriety USS Toledo (SSN 769)

Lt. Ion Drake USS Henry M. Jackson (SSBN 730) (G)

Lt. j.g. Corey Drozdowski USS New Hampshire (SSN 778)

Lt. Christopher Duffy USS Jimmy Carter (SSN 23)

Lt. j.g. Aaron Dupere USS John Warner (SSN 785)

USS Illinois (SSN 786)

Lt. Malcolm Eaton

Lt. Nicholas Eberhart USS Minnesota (SSN 783)

Lt. j.g. Scott Ebert USS Columbia (SSN 771)

Lt. j.g. Alexander Ebger USS Pennsylvania (SSBN 735) (B)

#### **COMSUBLANT Winners of 2017 Battle Efficiency Competition Awards:**

COMSUBRON 4 USS Minnesota (SSN 783) Capt. B. Tanaka Lt. Cmdr. L. Patterson ETRCM(SS) R. Snyder

COMSUBRON 6

USS Helena (SSN 725) Cmdr. J.Pittman Lt. Cmdr. E. Kasse (D) Lt. Cmdr. C. Rose (R) ETVCM(SS) A. Owens

USS Hartford (SSN 768)

**COMSUBRON 12** 

Cmdr. M. Fanning Lt. Cmdr. S. Bell (D) Lt. Cmdr. S. Halle (R) CMDCM(SS) J. Williams (D) STSCM(SS) N. Chappelle (R)

**COMSUBRON 16** USS Georgia (SSGN 729)(B)

Capt. G. Perez Lt. Cmdr. D. Burke MMACM(SS) B. Doebler USS Georgia (SSGN 729)(G) Capt. M. Badorf (D) Capt. D. Jordan (R) Lt. Cmdr. B. Bozin (D) Lt. Cmdr. C. Holland (R)

CMDCM J. R. Rosario

#### COMSUBRON 20

USS West Virginia (SSBN 736)(B) Capt. J. Coleman (D) Cmdr. J. Wyrick (R) Lt. Cmdr. A. Aviles MMWCM{SS) J. Riley

USS West Virginia (SSBN 736)(G) Cmdr. T. Clark Lt. Cmdr. A. Domina STSCM(SS) M. Williams

- Lt. j.g. Matthew Eblin USS West Virginia (SSBN 736) (G)
- Lt. Isaac Eckers USS Georgia (SSGN 729) (G)
- Lt. Kyle Elam USS New Mexico (SSN 779)
- Lt. John Emery USS Illinois (SSN 786)
- Lt. j.g. Nathan English USS Kentucky (SSBN 737) (B)
- Lt. Paul Evans USS Louisiana (SSBN 743) (B)
- Lt. Justin Feltkamp USS Columbia (SŜN 771)
- Lt. Joseph Finkle USS Jacksonville (SSN 699)
- Lt. Joseph Fiore USS Seawolf (SSN 21)
- Lt. j.g. Alexander Fishman USS Alaska (SSBN 732) (B)
- Lt. Kenneth Fletcher NPTU Ballston, N.Y. MARF
- Lt. j.g. John Flores USS Alexandria (SSN 757)
- Lt. Patrick Foley NSSC Kings Bay Ga.
- Lt. j.g. Erin Ford USS Florida (SSGN 728) (G)
- Lt. Joseph Frank USS Ohio (SSGN 726) (G)
- Lt. j.g. Francisco Galindez de Jesus USS Indiana (SSN 789)
- Lt. Daniel Gallagher USS San Francisco (SSN 711)
- Lt. Timothy Galvin USS Annapolis (SSN 760)
- Lt. Maggie Gardner USS Wyoming (SSBN 742) (G)
- Lt. Timothy Garrett USS Henry M. Jackson (SSBN 730) (G)
- Lt. Joshua Gaston
- USS Kentucky (SSBN 737) (G)
- Lt. Christopher Gear USS San Juan (SSN 751)
- Lt. James Giesemann USS Florida (SSGN 728) (G)
- Lt. Bryant Giorgi USS Nebraska (SSBN 739) (B)
- Lt. j.g. Benjamin Goclano USS Kentucky (SSBN 737) (G)
- Lt. Timothy Goins USS Oklahoma City (SSN 723)

- Lt. Laura Gorinski USS Virginia (SSN 774)
- Lt. Paul Graeter TTF Kings Bay Ga.
- Lt. j.g. Alexander Graham USS Missouri (SSN 780)
- Lt. John Grant USS West Virginia (SSBN 736) (B)
- Lt. j.g. Ian Gray USS West Virginia (SSBN 736) (G)
- Lt. Collin Grier USS Pasadena (SSN 752)\
- Lt. Garrett Griffin USS Newport News (SSN 750)
- Lt. Jacob Grogan USS Pennsylvania (SSBN 735) (B)
- Lt. Brian Gureck USS Louisville (SSN 724)
- Lt. Alexander Gutzler USS New Hampshire (SSN 778)
- Lt. Jon Hamilton USS Tennessee (SSBN 734) (B)
- Lt. Ryan Hard S Post Grad. Monterey, Calif.
- Lt. j.g. Cameron Harrigan USS Newport News (SSN 750)
- Lt. j.g. Jeremy Heimke USS Charlotte (SSN 766)
- Lt. Douglas Heinzel USS Louisiana (SSBN 743) (G)
- Lt. Kevin Hickey USS Missouri (SSN 780)
- Lt. Ross Hieatt COM NAV Marianas
- Lt. j.g. Erik Hoffstadt USS Rhode Island (SSBN 740) (B)
- Lt. Christopher Holmes USS Pennsylvania (SSBN 735) (G)
- Lt. David Hovle USS Newport News (SSN 750)
- Lt. Kyle Hrutkay
- USS Nebraska (SSBN 739) (B)
- Lt. Joshua Hyland USS Alabama (SSBN 731) (B)
- Lt. Robert Inglis USS Key West (SSN 722)
- Lt. David Irons COMSUBGRU 7
- Lt. David Jackson USS Wyoming (SSBN 742) (G)
- Lt. Sarah Jaeger COMSUBRON 6

- Lt. Mary Janowski S SNTWIP SpaceX
- Lt. Charles Johnson USS Georgia (SSGN 729) (G)
- Lt. David Johnson USS San Juan (SSN 751)
- Lt. Wesley Johnson TTF Bangor Wash.
- Lt. j.g. Jeremy Jorge USS Montpelier (SSN 765)
- Lt. Michael Keane USS New Mexico (SSN 779)
- Lt. David Kennedy USS Henry M. Jackson (SSBN 730)
- Lt. Firas Khoury USS San Francisco (SSN 711)
- Lt. j.g. Matthew Kilby USS Florida (SSGN 728) (B)
- Lt. Andrew King USS Nevada (SSBN 733) (B)
- Lt. Alexander Kinney TFF Bangor Wash.
- Lt. j.g. Michael Kirkpatrick USS Washington (SSN 787)
- Lt. Walker Klenk USS New Mexico (SSN 779)
- Lt. Daniel Klinge USS West Virginia (SSBN 736) (B)
- Lt. Brooks Knutson USS Maryland (SSBN 738) (G)
- Lt. Alexander Kornick USS Pittsburgh (SSN 720)
- Lt. Samuel Kowalczyk USS Jefferson City (SSN 759)
- Owen Kownacki USS Colorado (SSN 788)
- Lt. j.g. David Kramer USS Wyoming (SSBN 742) (B)
- Lt. Jarod Kramer USS Louisiana (SSBN 743) (B)
- Lt. Jordan Kronshage USS Minnesota (SSN 783)
- Lt. j.g. Thomas Krysil USS Wyoming (SSBN 742) (G)
- Lt. Michael Lacey USS Buffalo (SSN 715)
- Lt. Justin Lamothe USS Wyoming (SSBN 736) (G)
- Lt. Eric Lantz USS New Hampshire (SSN 778)
- Lt. Tyler Lawlor USS Annapolis (SSN 760)

- Lt. Philip Lee NROTĆ USD SDSU DC
- Lt. Victor Lee USS Alabama (SSBN 731) (G)
- Lt. Bradley Lentz USS Louisville (SSN 724)
- Lt. William Levi USS Columbus (SSN 762)
- Lt. Nicholas Linsodonnell USS Asheville (SSN 758)
- Lt. Mark Livengood USS West Virginia (SSBN 736) (G)
- Lt. j.g. Keaton Lockhart USS Ohio (SSGN 726) (B)
- Lt. Rory Loughran USS San Juan (SSN 751)
- Lt. Bryan Lowry USS Jacksonville (SSN 699)
- Lt. Calvin Luzum **COMDESRON 26**
- Lt. Owen Lynch USS Nebraska (SSBN 739) (G)
- Lt. David Mann USS North Dakota (SSN 784)
- Lt. Michael Martin NAVAL ACADEMY
- Lt. j.g. Christopher Masters USS Dallas (SSN 700)
- Lt. j.g. Joseph McAndrews USS Jefferson City (SSN 759)
- USS Michigan (SSGN 727) (B) Lt. Cameron McCord

Lt. David McClain

- USS Helena (SSN 725)
- Lt. j.g. Peyton McDonald USS Boise (SSN 764)
- Lt. William McDonald USS Dallas (SSN 700)
- Lt. Brandon McDowall USS Hawaii (SSN 776)
- Lt. Michael McGetrick USS Tucson (SSN 770)
- Lt. Kevin McKee DNS CMARCAD VALI
- Lt. Connor McLemore USS Bremerton (SSN 698)
- Lt. Scott McLennan USS San Francisco (SSN 711)
- Lt. Michael McPherson USS Washington (SSN 787)
- Lt. Barry McShane USS California (SSN 781)

#### Submarine Learning Facility Officer Awarded IOY for 2017

Naval Education and Training Command (NETC) announced its 2017 Military Instructors ce during surfaced of the Year (IOY) during a ceremony at the National Naval Aviation Museum aboard Naval Air Station Pensacola on Dec. 14.

For one IOY nominee standing before the crowd, the drive to be a better leader started with simply being a better mentor. Lt. Christopher DeMatteo, assigned to Submarine Learning Facility (SLF), Norfolk, understands that teaching is not just measured by how well information is presented but also how relevant that information is and how well his students understand it.

DeMatteo teaches about 25 students a month, which includes junior officers and enlisted Submariners, and attributes his success to his exposure to good and bad instructors and mentors early in his career.





To expand his own knowledge as an instructor, DeMatteo pursued his Master Training Specialist (MTS) qualification. The MTS designation, not earned by all instructors, serves to recognize outstanding individual effort and command training professionalism. As an MTS-qualified instructor, not only must DeMatteo demonstrate highly effective teaching skills but also take a leadership role in mentoring, instructing, and evaluating instructors

The NETC Military IOY award program recognizes Navy and Marine Corps instructors and facilitators who exemplify personal excellence and display outstanding instructional and leadership performance.

The program highlights the significant contributions of individuals from throughout the Naval Education and Training enterprise who have been nominated by their commands based on their sustained superior performance, accomplishments, community involvement, and personal and professional growth over the course of the past year.

- Lt. Thomas McSweeney USS Santa Fe (SSN 763)
- Lt. j.g. Daniel Meaney USS West Virginia (SSBN 736) (B)
- Lt. Curran Meek USS Asheville (SSN 758)
- Lt. Samuel Melick USS Hampton (SSN 767)
- Lt. William Melton USS Alexandria (SSN 757)
- Lt. Keegan Merkert USS Connecticut (SSN 22)
- Lt. Kyle Milden NAVÁL ACADEMY
- Lt. Trevor Milford USS Greeneville (SSN 772)
- Lt. j.g. Andrew Miller USS Alaska (SSBN 732) (G)
- Lt. Nicholas Miller NUSWCD N NWCF

Lt. Rvan Miller

Lt. Mark Moeller USS Chicago (SSN 721)

USS Jefferson City (SSN 759)

- Lt. j.g. Killian Monley USS Tennessee (SSBN 734) (G)
- Lt. Ian Morales USS Tennessee (SSBN 734) (B)
- Lt. Shane Moran USS Montpelier (SSN 765)
- Lt. Christopher Morgan COMSUBRON 21

Lt. Brett Morris

- USS Chicago (SSN 721) Lt. Devonta Morrison
- Lt. Fric Mosher USS Newport News (SSN 750)

NPTU Charleston S.C. D MTS

- Lt. j.g. Zachary Motter USS Oklahoma City (SSN 723)
- Lt. Samuel Murphy USS La Jolla (SSN 701)

Lt. j.g. Sean Murphy

- USS Henry M. Jackson (SSBN 730) (B) Lt. Steven Musselwhite USS Tennessee (SSBN 734) (G)
- Lt. Kristina Nelloms USS Michigan (SSGN 727) (B)

- Lt. Taylor Newman USS Boise (SSN 764)
- Lt. Kevin Nguy CNRC Millington, Tenn. Lt. j.g. Eric Nordquist
- USS Maine (SSBN 741) (B) Lt. Cory Oberst USS Alabama (SSBN 731) (G)
- Lt. Morgan Oblinsky USS Hartford (SSN 768)
- Lt. Temitope Ohiomoba USS Bremerton (SSN 698)
- Lt. Ryan Olehausen USS Columbia (SSN 771) Lt. Lindsay Olsen

NSTCPACPHFLT TT

- Lt. Tyler Otteson USS San Francisco (SSN 711)
- Lt. Joshua Otto USS New Hampshire (SSN 778)
- Lt. j.g. Richard Padron USS Alaska (SSBN 732) (B)
- Lt. Gregory Pavone USS North Dakota (SSN 784)

- Lt. Jacqueline Penichet USS Michigan (SSGN 727) (G)
- Lt. j.g. Marcus Perez USS Jacksonville (SSN 699)
- Lt. j.g. Andrew Pfau USS Cheyenne (SSN 773) Lt. Mark Pfender
- TTF Kings Bay FLT TT Lt. Charles Peirsall USS Helena (SSN 725)
- Lt. Julie Plessinger USS Minnesota (SSN 783)
- Lt. Landon Pogue USS Montpelier (SSN 765)

Lt. Eugene Portner

- NOPF Whidbey Island Lt. j.g. Gregory Poser USS Connecticut (SSN 22)
- Lt. George Prieto USS Missouri (SSN 780)
- Lt. Travis Probe USS Scranton (SSN 756)
- Lt. Michael Protesto USS Maryland (SSBN 738) (B)

Lt. Eric Provost	
USS Buf	falo (SSN 715)

- Lt. j.g. Lyndel Raiford USS Springfield (SSN 761)
- Lt. Michael Rawls USS Michigan (SSGN 727) (G)
- Lt. William Reach USS Michigan (SSGN 727) (G)
- Lt. Joseph Rego USS Hawaii (SSN 776)
- Lt. Kristopher Restel USS Chicago (SSN 721)
- Lt. Philip Reynolds USS Providence (SSN 719)
- Lt. Wesley Riley USS Cheyenne (SSN 773)
- Lt. Daniel Roberts USS San Francisco (SSN 711)
- Lt. Jason Roberts USS Hampton (SSN 767)
- Lt. Jeremiah Roberts USS Asheville (SSN 758)
- Lt. Ryan Robins **COMSUBRON 21**
- Lt. Cosmas Robless USS Buffalo (SSN 715)
- Lt. Ethan Rockett USS Nevada (SSBN 733) (G)
- Lt. Christopher Roehrborn USS Maryland (SSBN 738) (G)
- Lt. Logan Roy USS Annapolis (SSN 760)
- Lt. Andrew Rydalch USS Alabama (SSBN 731) (B)
- Lt. James Schlaerth USS Seawolf (SSN 21)
- Lt. j.g. Michael Schmitz USS Tennessee (SSBN 734) (G)
- Lt. Kristin Schoemaker USS Ohio (SSGN 726) (G)
- Lt. j.g. Joseph Scordino USS Illinois (SSN 786)
- Lt. Michael Selover USS Virginia (SSN 774)
- Lt. j.g. Matthew Sheeler USS Topeka (SSN 754)
- Lt. James Sheil USS Rhode Island (SSBN 740) (G)
- Lt. Daniel Shen
- USS North Carolina (SSN 777)
- Lt. Avery Sheridan USS Greeneville (SSN 772)

- Lt. Darren Sill USS Scranton (SSN 756)
- Lt. Derrick Simons USS Louisiana (SSBN 743) (G)
- Lt. Michael Sjoholmsierchio USS Maryland (SSBN 738) (B)
- Lt. Joshua Smith USS Seawolf (SSN 21)
- Lt. Kara Smith USS Virginia (SSN 774)
- Lt. j.g. Scott Smith USS West Virginia (SSBN 736) (B)
- Lt. j.g. Stephen Smith USS Georgia (SSGN 729) (B)
- Lt. Jason Snyder USS Dallas (SSN 700)
- Lt. Clinton Spencer USS Florida (SSGN 728) (G)
- Lt. j.g. Nathan Staats USS Alaska (SSBN 732) (B)
- Lt. Jonathan Stack USS Annapolis (SSN 760)
- Lt. Christopher Stevens USS Mississippi (SSN 782)
- Lt. Daniel Stickles USS Tennessee (SSBN 734) (B)
- Lt. j.g. Mark Strine USS Annapolis (SSN 760)
- Lt. j.g. Cody Stueve USS Tennessee (SSBN 734) (G)
- Lt. j.g. Tyler Susa USS Florida (SSGN 728) (B)
- Lt. Andrew Sweeney USS Ohio (SSGN 726) (G)
- Lt. Ross Sygulla USS Henry M. Jackson (SSBN 730) (B)
- Lt. Manasseh Szwabowski
- USS Jacksonville (SSN 699) Lt. j.g. Joshua Taft
- USS Wyoming (SSBN 742) (G)
- Lt Nicholas Takeuchi USS Missouri (SSN 780)
- Lt. Scott Tangen USS Virginia (SSN 774)
- Lt. j.g. Branden Tatasciore USS Albany (SSN 753)
- Lt. Andrew Taylor USS Key West (SSN 722)
- Lt. Alexander Teator USS Pennsylvania (SSBN 735) (B)
- Lt. j.g. Whitney Tharp USS Missouri (SSN 782)

- Lt. Nathan Thiem USS Louisville (SSN 724)
- Lt. James Thomas USS Annapolis (SSN 760)
- Lt. Andrew Thompson USS Topeka (SSN 754)
- Lt. j.g. Mackenzie Threlkeld USS Ohio (SSGN 726) (B)
- Lt. j.g. Connor Timmins USS North Carolina (SSN 777)
- Lt. Bryan Tobin USS Boise (SSN 764)
- Lt. David Towle USS West Virginia (SSBN 736) (G)
- Lt. Andrew Tresansky USS Pittsburgh (SSN 720)
- Lt. Harry Tuazon USS Florida (SSGN 728) (B)
- Lt. Michael Vahsen S PG USC
- Lt. James Van Kirk USS Ohio (SSGN 726) (G)
- Lt. Sean Vanosdale USS Alabama (SSBN 731) (G)
- Lt. Matthew Vegliante USS West Virginia (SSBN 736) (G)
- Lt. j.g. Justin Versteeg USS Cheyenne (SSN 773)
- Lt. Michael Vongonten USS North Dakota (SSN 784)
- Lt. j.g. Zachary Vrtis USS Chicago (SSN 721)
- Lt. Michael Walker USS Topeka (SSN 754)
- Lt. Johnathan Wargi USS Connecticut (SSN 22)
- Lt. Christine Warnick USS Wyoming (SSBN 742) (G)
- Lt. Eric Washkewicz USS Hartford (SSN 768)
- Lt. j.g. Thomas Wegener USS Florida (SSGN 728) (G)
- Lt. David Weise CTF 69
- Lt. Andrea Weiss USS Ohio (SSGN 726) (B)
- Lt. j.g. Nicholas Weithman USS Maine (SSBN 741) (G)
- Lt. Zachary Westlake USS Jefferson City (SSN 759)
- Lt. Andrew Wilkins USS Olympia (SSN 717)

- Lt. j.g. Jon Williams USS Charlotte (SSN 766)
- Lt. Joshua Williams CNAVPERSCOM Millington
- Lt. j.g. Sean Williams USS Charlotte (SSN 766)
- Lt. j.g. Kevin Wilson USS Pittsburgh (SSN 720)
- Lt. Jordan Wingate USS Greeneville (SSN 772)
- Lt. j.g. Benjamin Winter USS Georgia (SSGN 729) (B)
- Lt. Michael Wissehr NNPTC Charleston SC
- Lt. Ryan Wisz COMSUBPAC
- Lt. Louis Wood USS Springfield (SSN 761)
- Lt. Curtis Wynar USS Alabama (SSBN 731) (B)
- Lt. Michael Wynveen USS Olympia (SSN 717)
- Lt. j.g. Cole Yager USS Ohio (SSGN 726) (B)
- Lt. Eddie Zeng USS Seawolf (SSN 21)
- Lt. j.g. Matthew Ziesmer USS Louisiana (SSBN 743) (G)

#### **Qualified Engineering Department Master Chief**

- ETNCS Nathaniel Abel TTF Bangor TT
- EMNCS Antonio Aguialdo PH SMMS
- MMNC Michael Allen USS Indiana (SSN 789)
- ETNCM Robert Amerman NSTCPACPHFLT TT
- ETNCM Brian Anderson COMSUBRON 17
- EMNC Christoper Anderson USS Delaware (SSN 791)
- MMNCS Jonathan Andrews NPTU Charleston BOS
- MMNC Steven Andrews PH SMMS
- EMNCS Dean Anton USS Alabama (SSBN 731) (B)
- EMNCS Eric Armbrister USS Florida (SSGN 728) (B)

- **EMNCS Michael Armstrong** SMMSPMT Norfolk
- MMNCM Joaquin Arroyo COMSUBRON 4
- ETNCS Kevin Audrain SUBTRAFAC Norfolk FLT
- EMNC Jonathan Baggett USS Florida (SSGN 728) (G)
- EMNCM Brent Bagwell USS Michigan (SSGN 727) (B)
- MMNCS Aaron Bailey USS Springfield (SSN 761)
- EMNC Matthew Bailey USS Ohio (SSGN 726) (G)
- MMNCS Thomas Baldwin USS Montpelier (SSN 765)
- EMNCM John Bale COMSUBRON 11
- MMNC Samuel Barfuss COMSUBRON 1
- EMNC John Barnett USS Kentucky (SSBN 737) (B)
- ETNC Keith Bauer S NPTU Ballston
- EMNCM Christoper Bean COMSUBRON 1

ETNCS Joshua Bean

- USS La Jolla (SSN 701) MMNCS Tommy Beman
- USS Jimmy Carter (SSN 23) ETNCM James Berhalter
- NETPDC Pensacola Fla. MMNCS Paul Bermingham USS Asheville (SSN 758)
- MMNCM David Blake NRMD MD New London
- MMNC Daniel Blakeslee COMSUBRON 20
- EMNCS Matthew Blankenship COMSUBRON 12
- MMNC Richard Bolton TTF Bangor TT MMNCS Darrin Bostater
- USS Georgia (SSGN 729) (G) MMNCS Nicholas Bottoms

COMSUBRON 1

- MMNC Robert Bowen USS Alabama (SSBN 731) (G)
- EMNCS Matthew Brake USS New Mexico (SSN 779)
- MMNCS Joel Bradt NPTU Charleston D MTS

- ETNCM Jamie Brigman NNPTC Charleston S.C.
- EMNCM Stephen Brooke COMSUBLÂNT
- MMNC Tommy Brooks NRMD Point Loma
- MMNCM Michael Brougher USS Jimmy Carter (SSN 23)
- MMNC Timothy Brown USS Pennsylvania (SSBN 735) (B)
- MMNCS Justin Buckman NUFLDASCOL Charleston MMNCS Joseph Buehring
- USS Emory Land (AS 39) M/SC MMNCS Andrew Burness

COMSUBRON 7

- ETNCM Robert Burns NPTU Charleston GST
- MMNCM Brandon Busch COMSUBRON 15

MMNCS Matthew Campanile

- COMSUBRON 6 EMNC Shane Cary USS San Juan (SSN 751)
- MMNC Joseph Cefaratti USS California (SSN 781)
- Dir. Div. of Naval Reactors DOE EMNCS David Chechile

USS Columbus (SSN 762)

MMNCM Ronald Cervone

- ETNCS Leon Chen COMSUBGRU 8
- ETNCS Damian Chenot USS Kentucky (SSBN 737) (G)
- ETNCS Patrick Childs NPTU Ballston Spa BOS
- USS Illinois (SSN 786) MMNCM Darrin Clarke

MMNCS Andrew Chupashko

- TTF Kings Bay FLT TT MMNCM Jason Clough COMSUBRON 17
- ETNC Kenneth Cochran USS San Juan (SSN 751)
- **EMNCM Aaron Coffey COMSUBLANT**

MMNC Cory Codd

USS Maryland (SSBN 738) (B)

- EMNCS Aaron Coffey USS Maine (SSBN 741) (B)
- MMNCS Michael Coffman COMSUBLANT

- ETNC Timothy Coleman USS Nevada (SSBN 733) (B)
- MMNCS Chase Connell COMSUBRON 11
- MMNC Anthony Conner
- NRMD PAC
- MMNC Aaron Cook USS Greeneville (SSN 772)
- MMNC Brian Cooper USS Helena (SSN 725)
- MMNCM Jason Cox COMSUBRON 20
- MMNC Seth Crain USS Washington (SSN 787)
- MMNC Ian Cross NPTU Charleston GST

ETNCS John Daigle

COMSUBRON 4

- MMNCS Justin Daggett NSUBSUPF New London Conn.
- MMNC Aaron Dankof USS West Virginia (SSBN 736) (G)
- ETNCS Evan Davis USS Virginia (SSN 774)
- MMNCS Robbie Davis USS Maryland (SSBN 738) (G) EMNCM Johnny Dawes

COMSUBRON 7

- MMNCS Arthur Dearmond USS Ohio (SSBN 726) (G)
- ETNCM Kieth Deliteris NUFLDASCOL Charleston
- ETNCS Daniel Denault COMSUBRON 19 MMNCM Joseph Devore
- ETNCS Shaun Dewar NPTU Ballston Spa MARF

PH NSYD & IMF

- EMNCS Derek Diener PSBFOROPS COMP MMNCS Jason Dill
- USS Buffalo (SSN 715) MMNC Craig Double COMSUBRON 6
- MMNCS David Drury NSSC New London, Conn. OTH
- MMNCM Ryan Dwyer NPTU Ballston Spa BOS
- ETNCS Hunter Dyer USS Oklahoma City (SSN 723)
- EMNCS Christopher Echeandia S NPTU Charleston S.C.

- MMNC James Echtle USS Buffalo (SSN 715)
- **EMNCS Michael Edwards** USS Columbia (SSN 771)
- MMNC Kalani Eli NSTCPACPHFLT TT
- MMNCM Eric Emrick COMSUBLANT
- MMNCS Alan Engle
- SMMS PMT Bangor
- MMNC Jeremy Erickson COMSUBRON 17
- MMNCM Christopher Farrell PSBFOROPS COMP
- EMNCM David Field USS Oregon (SSN 793) EMNC Christopher Fisher

COMSUBRON 7

- ETNCM Brad Flemmons USS Louisville (SSN 724)
- ETNCS Gregory Foerster SHPYD REP Portsmouth
- **EMNCS Anthony Fortner** SMMS PMT Kings Bay EMNCS Sean Fortney

COMSUBRON 17

- ETNCS Adam Foster USS Boise (SSN 764)
- MMNCM William Foutz PSBFOROPS COMP
- MMNC Nicholas Francis COMSUBRON 4 EMNCS Cory Frazier
- USS Chicago (SSN 721) ETNC Kevin Frey USS Montpelier (SSN 765)
- MMNC John Fronek USS Colorado (SSN 788) MMNC Victor Fuller

USS Wyoming (SSBN 742) (B)

- MMNC Bruce Fullmer USS Tucson (SSN 770)
- EMNC James Gagnon SUBTRAFAC NORFLT EMNCM Angelo Galindo

COMSUBGRU 8

- ETNCS Zachary Gallegos USS North Carolina (SSN 777)
- ETNC John Garcia NPTU Charleston GST
- MMNCM Franklin Gardner Dir. Div. of Naval Reactors DOE

**DOWN**LINK

EMNC Michael Garland USS New Hampshire (SSN 778)

ETNCM Craig Garner USS Florida (SSGN 728) (G)

ETNCS David Gaughan COMSUBGRU 8

MMNCM Joshua Geasey NPTU Charleston BOS

ETNCS James Gerow USS Rhode Island (SSBN 740) (B)

EMNC John Gibbons USS Alaska (SSBN 732) (G)

MMNC Robert Gilkerson USS Kentucky (SSBN 737) (G)

MMNCM Matthew Glisson COMSUBGRU 10

MMNC Christopher Godt COMSUBRON 15

EMNC Patrick Golub USS Hawaii (SSN 776)

ETNC Raymond Gomez USS Pennsylvania (SSBN 735) (G)

ETNC Edwardo Gonzalez USS Oklahoma City (SSN 723)

ETNCM James Gorman USS Indiana (SSN 789)

EMNCS Nathan Gottsch USS Columbus (SSN 762)

EMNCS Matthew Gowan TRIREFAC Kings Bay

MMNC Alex Gozzola USS Minnesota (SSN 783)

MMNCS Brian Green COMSUBRON 12

EMNCS Jonathan Green USS Louisiana (SSBN 743) (B)

EMNCS Kenneth Green COMSUBRON 15 PMT

EMNC Robert Green USS Alaska (SSBN 732) (B)

MMNCS Michael Griffith COMSUBRON 19

EMNC Theodore Griffith COMSUBRON 4

MMNCS Dominick Grimaldi

USS Providence (SSN 719)

EMNCM Derek Gruell NPS Charleston BOS

ETNC Michael Halajian USS Charlotte (SSN 766)

MMNCM Jimmy Hall NUFLDASCOL Charleston EMNCS Randy Hall USS Dallas (SSN 700)

ETNC Matthew Hallbauer USS Buffalo (SSN 715)

MMNCS Michael Haraburda USS Olympia (SSN 717)

ETNC Brian Harper USS Jacksonville (SSN 699)

MMNCS Paul Harton NPTU Ballston Spa GST

ETNCM Corey Haselerhansen NSTCP SITE FTT

MMNC Jace Hastert COMSUBRON 16

MMNCS Todd Hatch USS Scranton (SSN 756)

MMNCS William Haussler COMSUBRON 12

MMNCS Jason Hays COMSUBRON 15

EMNCM David Hefel NPTU Charleston BOS

MMNCM Scott Heinchon SHPYD REP Newport News

EMNCS Craig Heinzeroth USS Toledo (SSN 769)

EMNCM Todd Hennon NPTU Charleston GST

MMNC James Henrie SMMS PMT N L

MMNCM Bryan Henry USS La Jolla (SSN 701)

EMNCS Adrian Hilderbrand USS Louisiana (SSBN 743) (G)

ETNCS Jeremy Hill USS Seawolf (SSN 21)

MMNCS Christopher Hisev USS Alabama (SSBN 731) (G)

EMNCM Robert Hitchcock USS Frank Cable (AS 40) M/SC

ETNC Donovan Hixson USS Newport News (SSN 750)

MMNC Matthew Hoff COMSUBRON 12

MMNC James Hoffmeyer USS Maryland (SSBN 738) (G)

ETNCM Shane Hollander USS Delaware (SSN 791)

ETNC Matthew Holman USS Jimmy Carter (SSN 23)

EMNCS Richard Holtmeyer USS California (SSN 781)

MMNCM Gerry Hooker SUBTRAFAC Norfolk FLT

ETNCS Zane Hornsby SUBSCOL FLT TT

EMNCS Mark Hubble SUBDEVRON 5 STAFF

ETNCS Kevin Hudson TTF Kings Bay FLT TT

EMNC Jeremy Hughes USS John Warner (SSN 785)

MMNC Gregory Hunt NUFLDASCOL Charleston S.C.

ETNCS Justin Huntley NPTU Ballston Spa BOS

EMNC James Hutchinson COMSUBRON 6

ETNCS Edward Jackson USS Washington (SSN 787) MMNCS Paul Jackson

USS Nebraska (SSBN 739) (G)

MMNCM Lynn Jacobson COMSUBRON 7

MMNCS Jesse Jelinek NRMD Kings Bay

MMNC Wayne Jenkins USS Tennessee (SSBN 734) (B)

MMNCM Charles Johnson USS Bremerton (SSN 698)

MMNCS Roy Johnson USS Kentucky (SSBN 737) (B)

MMNCS Steven Johnson NRMD PAC

MMNCS Michael Johnston TTF Bangor TT

MMNCM Hans Jones NPTU Charleston BOS

MMNC Gary Kalapinski USS West Virginia (SSBN 736) (B)

EMNC Curtis Kammerer USS South Dakota (SSN 790)

MMNCS Timothy Kenny COMSUBRON 19

MMNCS Ronald Kielbasa USS Jimmy Carter (SSN 23)

ETNC Scott Kimbler USS Georgia (SSGN 729) (B)

MMNCS John King USS West Virginia (SSBN 736) (B)

ETNCS Alan Kinman CNAVPERSCOM Millington

ETNCS Joshua Knauer SHIPYARD REP Groton, Conn. EMNC Scott Koenig USS Jimmy Carter (SSN 23)

MMNCM Christopher Konopka COMSUBRON 6

ETNC Joshua Kornmann SUBDEVRON 5 STAF

MMNCS David Labreche USS Key West (SSN 722)

MMNCS George Landsberger NPTU Charleston GST

MMNCS Jeffrey Larrabee NPTU Charleston BOS

ETNCS Christopher Lawrence USS Jefferson City (SSN 759)

MMNCS Elton Lee USS San Juan (SSN 751)

ETNCM Anthony Liss USS North Dakota (SSN 784)

ETNCS Christopher Little NUFLDASCOL Charleston

EMNC Matthew Looney USS Tennessee (SSBN 734) (G)

MMNCM James Lucky **BUREAU PERSONNEL** 

EMNC Daniel Macomber USS Virginia (SSN 774)

EMNC Mitch Mahan USS Louisville (SSN 724)

ETNCS Nicholas Manning USS Nebraska (SSBN 739) (B)

MMNC Justin Marchione USS San Francisco (SSN 711)

ETNC Thomas Marsland USS Connecticut (SSN 22)

MMNCS Brandon Martin USS Albany (SSN 753)

ETNCS Frank Mason USS Charlotte (SSN 766)

MMNC Christopher Matter USS Illinois (SSN 786)

MMNCM Matthew Matteson CNR Arlington Va.

ETNCS Bradley May TTF Bangor TT

MMNCM Wayne Maynor NUFLDASCOL Charleston

ETNCS Ethan Mayo USS Texas (SSN 775)

ETNC Anthony Mazza NPTU Charleston D MTS

MMNCS Edward McGuire USS Georgia (SSGN 729) (B) **DOWN**LINK

ETNC Brian McInvale USS Missouri (SSN 780)

ETNCM Steven McKee COMSUBRON 16

MMNCS Stephen McKinley USS Nebraska (SSBN 739) (G)

ETNCM Thomas McKinney COMSUBLANT MMNCM Michael McMurtray

SHIPYARD REP NNSY EMNCM Matthew McNulty COMSUBRON 16

ETNCS Ryan McVeigh NPTU Charleston D MTS

ETNC Ronald McVicker USS Minnesota (SSN 783)

EMNCM James Meador USS Tennessee (SSBN 734) (G)

MMNCS David Medert USS Topeka (SSN 754) EMNCS Michael Mercer

NUFLDASCOL Charleston MMNC Jesse Miller

USS West Virginia (SSBN 736) (B)

ETNCS Lyle Milner FSC Great Lakes

EMNC Bradley Monell USS Dallas (SSN 700)

EMNCM Zachary Montello SR ENL ACAD

MTS 701 Charleston S.C. ETNCM Scott Morgan CSP SHIPYARD REP PS

ETNC John Moran

**EMNCS Michael Morris** USS La Jolla (SSN 701)

MMNCS Randall Morris NPTU Charleston D MTS

MMNCS Michael Mrsny NPTU Charleston D MTS

MMNC Kenneth Murray USS Annapolis (SSN 760)

EMNCM Mark Murray NPTU Ballston Spa BOS MMNCS Steven Nagle

TTF BANGOR

ETNCM Richard Nantell USS South Dakota (SSN 790)

MMNCS Ben Narkis COMSUBRON 20

EMNC Wayne Neufeld USS Alabama (SSBN 731) G) MMNCS Joshua Newcomb NPTU Ballston Spa BOS

MMNCS Jonathan Noll Dir. Div. of Naval Reactors DOE

MMNCS Matthew Noury USS New Hampshire (SSN 778)

MMNCS Michael Nutt USS Pennsylvania (SSBN 735) (B)

MMNC Alex Oconnor COMSUBRON 11 EMNCM Shawn Olmstead

USS Vermont (SSN 792) MMNCS David Olsen COMSUBRON 15 PMT

MMNC Cody Olson USS Scranton (SSN 756)

EMNC Peter Olson USS Minnesota (SSN 783)

MMNCM Jacob Orlowski USS Hartford (SSN 768)

MMNCS Edward Oskorep

USS Pittsburgh (SSN 720)

ETNCM John Oviatt TRIREFAC Kings Bay

MMNC Jeffrey Owen NRMD MD New London

TTF Bangor TT MMNCS James Oxendine

MMNCM Steven Owens

USS Minnesota (SSN 783) MMNCS Dustin Palmer SUBDEVRON 5 STAF

MMNCS Jonathon Parks SUBTRAFAC Norfolk FLT

EMNC Trent Parrish COMSUBRON 6

COMSUBRON 19 ETNC Jeremy Patin USS Bremerton (SSN 698)

MMNCM Ryan Parsons

ETNCM Matthew Payne COMSUBGRU 9

MMNC Apollo Pedersen SMMS PMT Kings Bay

MMNC David Pefley

USS Pasadena (SSN 752)

EMNC Brett Percich COMSUBRON 19

MMNCS Robert Perry USS Hampton (SSN 767)

ETNCS Joshua Peterson COMSUBRON 12

MMNC Glen Phillips USS John Warner (SSN 785)

ETNCM Eric Playdon COMSUBPAC

EMNCS Donte Polson USS Chevenne (SSN 773)

ETNC Jason Polzin USS Hawaii (SSN 776)

MMNC Brian Ponder USS Pennsylvania (SSBN 735) (G)

MMNC Joseph Powell COMSUBRON 19

ETNCM Gregory Prichard PSBFOROPS COMP

MMNC John Primm TTF Kings Bay

EMNCS Michael Quackenbush NPTU Ballston MARF

MMNCS James Qualls USS Michigan (SSGN 727) (G)

EMNCS Travis Radzyminski USS Oklahoma City (SSN 723) ETNCS Steven Ralph

NUFLDASCOL Charleston

MMNC Nathaniel Ranck SHIPYARD REP Newport News

MMNC William Ransdell NRMD Kings Bay

MMNCM Sanjiv Rao PSBFOROPS COMP

EMNC Jonathan Ray NPTU Charleston GST

EMNC Jesse Rayburn USS Louisiana (SSBN 743) (G)

ETNC Robert Reed TRIREFAC Kings Bay

EMNCS Jason Reifsnyder USS Maryland (SSBN 738) (B)

**EMNCS Michael Reuss** USS Hawaii (SSN 776)

**EMNC Timothy Rhodes** USS Michigan (SSGN 727) (B)

MMNCS Alan Rice CSP SHIPYARD REP PS

EMNCM Eric Riddle NPTU Charleston BOS

EMNC Charles Rivers NRMD Kings Bay

#### **2017 Stockdale Award Recipients** Announced

Navy announced the two 2017 Vice Admiral James Bond

Stockdale Leadership Award recipients in NAVADMIN 215/17. Cmdr. Brian M. Drechsler, former commanding officer of Sea, Air, Land (SEAL) Team Five is the Pacific Fleet recipient and Cmdr. Eric M. Sager, former commanding officer of USS California (SSN 781) is the Fleet Forces recipient.

The two recipients were nominated by their peers, who

were also eligible for the award, and chosen from among eight finalists to receive the award. The Stockdale award was

established in honor of Vice Adm. Stockdale whose distinguished naval career symbolized the highest standards of excellence in both personal conduct and leadership. It is presented annually to two



commissioned officers on active duty in the grade of commander or below who are serving in command of a single ship, submarine, aviation squadron, Sea, Air, Land (SEAL) team, naval special warfare squadron, SEAL delivery vehicle team, special boat team, explosive ordnance disposal mobile unit, mobile diving and salvage unit, or Navy special clearance team and who serve as examples of excellence in leadership and conspicuous contribution to the improvement of leadership in the Navy.

#### **DOWN**LINK

MMNCM Courtney Roach NPTU Ballston Spa GST

EMNCS James Robinson USS West Virginia (SSBN 736) (G)

EMNCS Andrew Rockman USS *Alaska* (SSBN 732) (B)

EMNCM Ryan Rolfe NPTU Ballston Spa BOS

MMNCS Anthony Romano SHIPYARD REP Groton

EMNC James Ross COMSUBRON 20

MMNCS Michael Rossow S NPTU Charleston S.C.

MMNCS Jason Rubenstein USS *Ohio* (SSGN 726) (B)

MMNCS Steven Rueschenberg USS Mississippi (SSN 782)

ETNC Aaron Ruffin USS New Hampshire (SSN 778)

ETNC Steven Rush COMSUBGRU 7

MMNCS John Russo USS Rhode Island (SSBN 740) (G)

ETNCM Justin Ryman USS Maryland (SSBN 738) (G)

MMNC Arnoldo Saenz BANGOR SMMS PMT

ETNC Michael Schaefer USS Louisiana (SSBN 743) (B)

ETNCS Todd Schaefer NRMD Kings Bay

ETNCS Darby Schaff SLCDET San Diego FLT TT

MMNCM Brian Schlapkohl NPTU Charleston GST

MMNCM Christopher Schlegel PSBFOROPS COMP

ETNC Justin Schow COMSUBRON 20

ETNCM Eric Schroeder USS Maine (SSBN 741) (B)

EMNCS Eric Schulte USS *Tucson* (SSN 770)

MMNCS Benjamin Schulz USS Colorado (SSN 788)

EMNC Steven Schulz USS *Bremerton* (SSN 698)

ETNC Zachary Scott USS *Indiana* (SSN 789)

MMNC Daniel Selby USS *Nevada* (SSBN 733) (B) MMNCS Shane Shadrick NNPTC Charleston S.C.

EMNCS Joseph Shaffner USS *Greeneville* (SSN 772)

ETNCS Robert Shawver COMSUBRON 17

EMNCM Jonathan Sheldon SUBSCOL FLT TT

MMNCM John Shingleton TTF Kings Bay FLT TT

EMNCS Heath Shirley USS Georgia (SSGN 729) (B)

MMNCS Wesley Shuman NRMD Point Loma

ETNC Joseph Simecek NUFLDASCOL Charleston S.C.

EMNCS Bitt Sims USS Santa Fe (SSN 763)

EMNCS Michael Sims USS *Pasadena* (SSN 752)

MMNCM Charles Skelton NPTU Charleston BOS

EMNCS Jerome Smallwood TTF Kings Bay

EMNCS Alexander Smerz PH NSYD & IMF

ETNCS Colin Smith COMSUBRON 19

EMNCS Daniel Smith

ETNCS Matthew Smith USS John Warner (SSN 785)

ETNCS Randy Sparks USS *Annapolis* (SSN 760)

ETNCS Duston Spicer USS *Henry M. Jackson* (SSBN 730) (B)

MMNC David Spisak COMSUBRON 4

MMNC Eric Stanton NPTU Ballston Spa BOS

EMNC Randell Stark SUBTRAFAC Norfolk FLT

MMNCS Jason Statler USS Nevada (SSBN 733) (B)

MMNCM Aaron Stein SUBTRAFAC Norfolk FLT

ETNCS Jonathan Stephens NPTU BALL MARF

MMNCS Scott Stephenson SLC Groton Conn.

EMNC Mark Steward USS *Louisiana* (SSBN 743) (B) EMNCS Robert Stough USS Pennsylvania (SSBN 735) (G)

EMNC Jonathan Sword USS *Illinois* (SSN 786)

MMNC Scott Tadevich COMSUBRON 1

MMNC Albert Taylor USS Santa Fe (SSN 763)

MMNCM Glenn Teter USS Missouri (SSN 780)

MMNC Bryan Thebo COMSUBRON 16

EMNC Richard Thompson NNPTC Charleston S.C.

ETNCS Ivan Tirona USS Santa Fe (SSN 763)

MMNCM Christopher Tolliver CNAVPERSCOM Millington

EMNC Nathaniel Toole COMSUBRON 1

ETNCS Luis Torres USS *Alexandria* (SSN 757)

ETNC Joel Tortoriello USS *Oregon* (SSN 793)

ETNC Bradley Tracy NPTU Charleston D MTS

MMNC Erik Turner USS *Missouri* (SNS 780)

ETNCS Terrance Tyson COMSUBRON 15

EMNC Matthew Vance NPTU Charleston D MTS

MMNCS Gary Van Dyke COMSUBRON 20

MMNCS Jason Vangorden USS *Henry M. Jackson* (SSBN 730) (G)

EMNC Anthony Vezina SUBDEVRON 5 STAFF

MMNCS Craig Vivian USS *Alaska* (SSBN 732) (G)

MMNC Joshua Walton USS *Florida* (SSGN 728) (B)

ETNCS Anthony Waters USS *Tennessee* (SSBN 734) (B)

EMNCM Michael Watson PSBFOROPS COMP

MMNC Walter Webb USS *Alaska* (SSBN 732) (B)

EMNCS David Welch USS *Nevada* (SSBN 733) (G)

EMNCS Travis White USS San Francisco (SSN 711) ETNC Auston Whitmer S NUFLDASCOL S.C.

MMNCM Theodore Whitmer

MMNCS Christopher Wilkerson USS *La Jolla* (SSN 701)

EMNC Carl Will NPTU Charleston D MTS

MMNC Joshua Willett USS Oklahoma City (SSN 723)

MMNCS Joseph Winn USS *Helena* (SSN 725)

ETNC Joseph Wisniewski USS West Virginia (SSBN 736) (B)

EMNC Peter Woelkers USS Washington (SSN 787)

MMNCS Benjamin Woellert NPTU Ballston Spa BOS

ETNCM Leonard Wolf COMSUBRON 20

ETNC David Wright COMSUBRON 7

MMNCS Joseph Wright COMSUBRON 7

ETNCS Andrew Yates USS Wyoming (SSBN 742) (B)

MMNC Timothy Zenner USS Mississippi (SSN 782)

MMNC Jason Zerweck USS Springfield (SSN 761)



### ANNOUNCING:

UNDERSEA WARFARE Magazine is looking for this year's top submarine-related photos for the 19th Annual Photo Contest. The best of the best will be published in the Summer 2018 edition.

Established in 1999 and co-sponsored by the Naval Submarine League and the Director, Submarine Warfare (OPNAV N97), we recognize four winning photos each year with the following cash awards: 1st Place: \$500, 2nd Place: \$250, 3rd Place: \$200 and Honorable Mention: \$50.

**Note:** Entries must be received by June 15, 2018. However time permitting, photos received shortly after the deadline will be considered.

Digital submissions must be at least 5" by 7", at least 300 dots-per-inch (dpi), and previously unpublished in printed media. Each person is limited to five submissions, which can be sent as JPG or other digital photo format to the email address below. Printed photos may also be mailed to the following address:

Military Editor Undersea Warfare CNO 2000 Navy Pentagon Washington, D.C. 20350-2000

Or email to: underseawarfare@hotmail.com

# Submarine League's 19th Annual Photo Contest



#### A Brief History of U.S. Submarines



# USS Skate (SSN 578)

USS *Skate* (SSN 578) was the U.S. Navy's third commissioned nuclear-powered submarine. Her keel was laid July 21, 1955 by General Dynamics Corp.'s Electric Boat Division in Groton, Conn. She was launched nearly two years later on May 16, 1957, and she was commissioned December 23, 1957 with Cmdr. James F. Calvert in command.

With the advent of nuclear-powered submarines, the latter half of the 1950s and early 1960s was a time of pushing boundaries and setting records, which began with the Navy's first nuclear-powered submarine, USS *Nautilus* (SSN 571), traveling from the Pacific to the Atlantic underneath the polar ice cap in the summer of 1958. *Skate* did not have to wait long for her own notoriety, however.

In early 1958, *Skate* left her homeport of New London, Conn. to make the first fully submerged crossing of the Atlantic, arriving in Portsmouth, England. Today this would not be considered much of an accomplishment, but this was just 13 years after the end of WWII when such a capability by Germany's U-boats could have drastically altered the course of the war.

Less than a year after *Nautilus*' famed journey past the North Pole under the arctic ice, *Skate* departed New London for the North Pole, becoming the second submarine to reach it. *Skate*, however, on March 17, 1959, was the first submarine to surface there, and she did it during the Arctic's winter. She didn't surface in the Arctic just once, but 10 times during that deployment.

While at the North Pole, *Skate's* crew deposited there the ashes of famed Arctic explorer Sir Hubert Wilkins. Wilkins was the first Arctic explorer to attempt reaching the North Pole by submarine, using the former USS *O-12* (SS 73) converted for the 1931 expedition.

The purpose of this deployment to the Arctic was not to set a record, but to test the boat's ability to surface through ice even during the region's coldest time of year. The Navy wanted to know if its submarines could operate in the harshest maritime environment on earth during that region's harshest time of year.

Skate also tested new technologies for operating under the ice. One such system was a bottom-sounding sonar for detecting and mapping the underside of the ice canopy, which also enabled the crew to avoid ice keels and locate polynyas through which to surface. Another was a buoyant cable that was floated up against the underside of the ice canopy that proved capable of receiving radio messages.

Skate made additional deployments to the Arctic in the following years in addition to deployments to Europe and the Mediterranean. She was the first submarine to complete the new SUBSAFE conversion in 1965. Skate was decommissioned September 12, 1986 after nearly 29 years of active service.